The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME LI. CHICAGO, ILLINOIS, FEBRUARY 8, 1908. NUMBER 6.

Original Articles

ENFORCEMENT OF MEDICAL PRACTICE LAWS BY COUNTY SOCIETIES.

AS EXEMPLIFIED BY THE LEGAL WORK OF THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.*

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In the scheme of medical organization county societies have certain peculiar and specific functions which other medical bodies do not possess. They are especially charged with the duty of guarding the financial and temporal interests of medical men, of standing as their representative before the people, and of performing some of those duties which the medical profession owes to the public. The county society may well be denominated the business agent of the medical profession.

Enforcement of the medical practice laws, and the protection of the public against illegal and criminal practitioners, are among the duties which the county society owes to the profession and to the public. A never-ceasing warfare is waged by the charlatan and criminal practitioner, and they must be met on two battlefields, the legislature and the courts, and there the medical profession requires an alert and experienced champion who is ready not only to defend but also to attack. The Medical Society of the County of New York has performed this special duty with particular energy and success. The work of its legal department is carried on systematically every working day of the year. It is only by persistent and systematic work that the best results can be obtained.

In small counties and rural communities occasional work is all that is required, but the county society should be ready to do it as the need arises. Actual prosecution by the society is not always necessary to the doing of "legal work." An important feature of a legal case is thorough preparation of the evidence. That function may be assumed by an individual or a society, even in states which do not confer special legal powers. Such evidence may then be placed in the hands of the district attorney for presentation in court, unless that official is inimical to such work. If he is the kind of man to push the prosecution in a conscientious and efficient manner, the county society may do much to keep the county free from illegal practitioners, without maintaining a counsel or a full legal department. Unfortunately, many district attorneys can not be relied on, for in some localities neither the people nor the prosecuting officers or judges are educated to the belief that quackery is a very serious offense. Persistence on the part of a county society, however, in most cases, would enable it to accomplish results through the constituted legal authorities. The simpler class of quacks and illegal practitioners could thus be reached, but special legal training and experience are necessary to convict many of the clever charlatans who operate outside the routine lines. In the larger cities the work can be done satisfactorily only by specially experienced lawyers, for it has come to be a highly specialized department of legal practice. In New York all of the legal policies adopted by the Medical Society have been the result of inventive legal work and the securing of evidence to back up the legal principles which have been established has been a mere detail. The New York County Society prosecutes most of its cases through its own counsel, by courtesy of the district attorney, but occasionally, for special reasons, the evidence is turned over to the local district attorney or to the United States District Attorney.

The state and county societies in New York were organized pursuant to the important law of April 4, 1806, and the duty of regulating medical practice was placed on them by the state at their very inception. On the county societies legal powers are conferred which make them members of a group of organizations to which are entrusted the duty of enforcing certain provisions of the criminal law. Some of the well known societies of this group are the societies for the prevention of cruelty to animals and to children.

While the actual legal work must be done by an attorney qualified to practice in the New York courts, it is kept in the hands of the society by a provision of the constitution, which makes its supervision a special duty of the board of censors. No legal action can be instituted without the knowledge and approval of that board. Under these provisions, Champe S. Andrews, Esq., of the New York Bar, has been counsel for the past eight years.

Having now come to the end of seven years of service on the Comitia Minora, by a very proper precedent, I shall soon retire from official work. So great have been the changes during this time and so important have been the results of certain phases of the legal work that I have felt that they should be presented in comprehensive form. The reports made at the annual meetings are full and complete, but are necessarily fragmentary, as each one covers but a single year. A statement of the aims of the counsel and censors in the legal work and an account of the results obtained during recent years seems eminently proper.

An interesting fact disclosed by the legal work is the change in the methods of the modern charlatan. He is eminently up to date and keeps well abreast of every discovery. It is one of his chief characteristics that he imitates the latest scientific methods. In combating him, therefore, the methods of attack must be changed constantly. Many of the legal methods of five years ago would be useless to-day. Not only does the quack change

* Read before the Medical Society of the County of New York at its One Hundred and Second Annual Meeting.

his methods as new discoveries are made, but he has also learned a lesson from the promoters of questionable business schemes, and frequently seeks legal advice as to how he can safely conduct his unlawful business. In addition to this, powerful political influence is sometimes encountered. The successful prosecution of these cases is no easy task and requires not only legal ability of a high order, but experience and energy, and no small amount of courage.

Notwithstanding these difficulties, some of the strongest and most resolute violators of the medical law have been attacked successfully during the past few years. One of the magistrates of the Court of Special Sessions said not long since, "The medical society has practically run out of business the ordinary quack. It now seems to be turning its attention to the quack who is coached by a lawyer, or has worked out some ingenious method of his own to evade the medical law."

It is frequently asserted that credulity is increasing, notwithstanding our supposed advancement in civilization. A more feasible explanation, perhaps, is the fact that the credulous are more easily reached by the sharpers than they ever were before, which makes the legal work more difficult. I do not need to describe to you the means of communication between the impostor and the credulous dupe. Newspaper publicity is the breath of life of the modern charlatan. Shut him out from the newspapers, lay and religious, and debar him from the mails, and you exterminate him, as you do the mosquito by draining the swamps and oiling the water.

Much of the legal work has become well understood by members of the society. But little has been said, however, on one important feature, and it is not generally understood. It is to this feature that I wish especially to call your attention. I refer to the systematic efforts that have been made to place the work of enforcing the medical practice laws on a more sound and comprehensive basis. To that end, certain systematic series of prosecutions have been taken up for the purpose of establishing legal principles and precedents. Many prosecutions have been instituted, not alone to convict an individual, but even more, as a step toward establishing a principle of law, for in legal practice precedent is a most important and necessary factor. In this state, as in other states of the Union, enforcement of the medical practice laws has been almost an unworked field, and, up to five or six years ago, there were but few precedents, principles, or guiding landmarks. Prosecutions were instituted for but few offenses, and were conducted along certain well established lines. The worst offenders were beyond reach by the established methods and a systematic widening of the lines was necessary.

The first step toward better work, therefore, was to attack more important cases and to begin a systematic campaign for the establishing of legal precedents. This was in the nature of an evolution, the decision on one case being used as a basis for securing a decision on one a little more difficult, until to-day the judges are constantly rendering decisions which would not have been possible five years ago. For purposes of education, complete records of many cases have been printed and distributed by the society, not alone to physicians, but also to the bench and bar.

The first and most important principle to be established was a decision by the highest court of the state defining the practice of medicine, for no such definition existed in this state. We were told on more than one occasion, at Albany, that a definition of the practice of medicine could probably not be obtained from the legislature until one had been formulated by the courts. The only ruling on the question by the higher courts was the well-known decision by Judge Daniels, of the Supreme court, in the case of Smith vs. Lane, in 1881, in which it was asserted that it could not be maintained that one practiced medicine unless drugs were administered. That is, the practice of medicine in New York, from the legal point of view, consisted only in the prescribing of drugs. The reason for this intolerable state of affairs must be sought by a brief reference to history. Up to a few years ago medical science was meager as compared with the science of to-day. Medical treatment meant simply the giving of drugs and almost all diseases were treated by drugs. Anesthesia and asepsis were unknown and surgery was almost unutilized. Climate, diet, exercise, massage, electricity, *x*-ray, orthopedic appliances and many other remedial agencies were never used. Then, medicine and drug giving were, indeed, synonymous. The laity and the courts were slow to recognize the changes wrought by modern knowledge and methods of treatment, and legally we retained the conception of medicine of a century ago.

As a result of this misconception and limited definition, we have seen a strange thing come to pass during recent years. A swarm of new systems of practice has arisen, some of them grotesque in nature. A study of these new systems shows that no matter how diversified they may be in character, they have one feature in common, namely, they use no drugs. This they proclaim from the housetops. Is not the reason clear for this alleged fear of drugs and this development of non-drug giving systems? The repudiation of drugs has been the most certain way to circumvent the medical laws and escape those annoying requirements of preliminary education, four expensive years in a medical college and a state examination.

Thus matters stood until 1901, when the counsel, with the full support of the censors, entered on a campaign to secure a definition. This campaign was undertaken in the belief that with well selected cases modern conditions of practice would be recognized by the courts, and the conviction of unlicensed practitioners could be obtained when no drugs were used. The first of these selected cases (People vs. Martin, 1901) was brought against a man who used electricity in a case of fistula, and a conviction was obtained, the first in the state. The next case (People vs. Rohrer, 1902) was brought against a man who styled himself "hydropathic physician" and employed steam baths and electricity. The third important case (People vs. Sadow, 1904) was a prosecution for the employment of electricity and massage. The fourth case (People vs. Starken, 1904) was a prosecution for simply giving steam baths. Other convictions were secured, one for giving hypnotic treatment only. In all these cases the main question raised in the trial was as to whether the defendant undertook to diagnose and cure disease. The method of treatment, whether with or without drugs, was made incidental to the main question.

These cases established precedents in the lower courts and had their value, but not one of them was appealed. Hence, each case was a test case in itself, and no definition was obtained. Finally, a man was arrested for holding himself out as a doctor of "mechanico-neural therapy." He was defended by one of the ablest law firms in the city, and it was two years before the case (People vs. Allcutt) could be brought to trial. Con-

viction resulted and to our great satisfaction the case was appealed. The conviction was unanimously affirmed in February, 1907, by the Appellate Division of the Supreme Court, and after an able argument on appeal by Robert C. Taylor, Esq., of the District Attorney's office, was unanimously affirmed June 14, 1907, by the Court of Appeals. The old adage regarding a famine or a feast was exemplified. Not only has the year 1907 seen the long sought definition established by the court of final appeal, but it has also seen the best legal definition yet formulated enacted into law in the Medical Unity Bill.

Certain features of the decision of the Appellate Division, written by Justice John Proctor Clark, are worthy of notice, for they show a clear understanding of modern medical conditions. "To confine the definition of the words 'practice medicine,'" reads the decision, "to mere administration of drugs or the use of surgical instruments, would be to eliminate the very corner stone of successful medical practice, namely, the diagnosis. . . . Diagnosis would seem to be an integral part of both the study and practice of medicine, so recognized by the law as well as common sense. The correct determination of what the trouble is, must be the first step for the cure thereof." The judges in their decision then ask the pertinent question, "Would the physician, who by his skill discovered incipient consumption, and who advised the open air treatment and refrained from administering drugs not be practicing medicine?" The decision was strong and comprehensive, and a much more liberal reward for years of labor than is sometimes reaped in this world.

The portion of our work next in importance, perhaps, is the campaign against the abortionists. It is the part that is least understood and most criticised. The production of abortion has been a crime from the dawn of civilization, and has been a penal offense since the earliest Ptolemaic period. From Colonial times, few other offenses have figured more largely in the penal code of this state. We have added no laws on this subject, nor have we asked that any be enacted. We have simply enforced the existing laws of the state. The extent of the abortion business, and the appalling rapidity of its increase, is appreciated by but few. There is substantial ground for the belief that 100,000 abortions are committed annually in New York. We do not and never have believed that it can be wholly stopped, any more than we expect to wholly stop many other forms of crime, but it can be controlled and limited. So long had it flourished without let or hindrance, that it had become reckless of the laws and of public decency. We were driven into the work, as Chicago is now being driven into it. In that city, as in this, midwives and advertising abortionists had been wholly unrestrained, and conditions had become so intolerable that certain organizations applied to us last summer for advice and help. The Public Health Defence League, therefore, sent Miss Crowell to Chicago, and this society sent one of its experienced detectives to aid in investigating and laying the foundation for a campaign against the evil. It is a loathsome business, and the censors and counsel of the society attacked it not from choice or desire, but because it was forced on them. Not only were complaints being received more and more frequently from members of the society, but the Police Department, the District Attorney's office, and the Health Department, were referring cases to us as a part of our proper work. Notwithstanding its repelling character, we undertook it as the surgeon undertakes to relieve a sloughing sore.

The midwives were the first against whom action was taken. There are about one thousand midwives in Manhattan Borough. Last year, in the greater city, 48,111 mothers were attended in their confinements by midwives, or 43 per cent. of the total number of births. Conditions relating to midwives are no longer matters of conjecture solely, for many facts have been determined by personal investigation, particularly by that of Miss Crowell,[1] who visited 500 midwives and studied their methods. Among the midwives of New York are many women against whom it would be gross injustice to cast any aspersion and certain classes of our population rely wholly on them for obstetric service. But because of imperfect registration and lack of supervision, many women have assumed the title of midwife who are nothing more nor less than abortionists, and have used it as a cloak to cover a criminal business. Under the law enacted last spring, we have reason to expect radical improvement, but our work thus far has been conducted under the old conditions, which were very bad.

Another extremely important fact is well established. The midwife abortionist does not use drugs in her work. She uses instruments. Miss Crowell found 269 bags and sets of instruments which she designated as dirty. Every physician knows too well what is meant by the use of such instruments in total disregard of ordinary cleanliness, not to speak of asepsis. The path of this class of abortionists is strewn with the corpses of women and girls.

The first efforts in the campaign against the midwives at once demonstrated great difficulties. Legal evidence is very difficult to obtain. The operation is performed behind closed doors, and the victim, for obvious reasons, can rarely be used as a witness. Some of the methods that had been universally employed for obtaining evidence in such cases, while admissible, perhaps, by the police, were of a character unappropriate to a society like this, and it was felt by the officers and counsel that they should not be employed. The counsel, therefore, began a series of cases which has established a principle in the courts, by which many criminal midwives have been convicted for agreeing to perform a surgical operation and doing any overt act tending to consummate that agreement, and we now successfully prosecute, without using those old objectionable methods.

But efforts did not end here. The counsel then advanced a theory which had never been brought forward in a legal case, either in this country or abroad, namely, that to conduct a house where abortions are habitually performed constitutes a nuisance, and as such can be abated. The working up to this principle was a long and laborious process. The test case (People vs. Hoffman) came in December last in the prosecution of an especially revolting criminal. She burned a portion of the fetuses in the furnace, but many of them, by an arrangement with a neighboring undertaker, were hidden under the linings of caskets and were thus disposed of. At the trial, however, no operation and no attempt at an operation was shown, nor the commission of an overt act. It was simply shown that she harbored in her house many women on whom criminal operations were performed, and in veiled language advertised her house in the daily papers as open for such work. She was convicted of maintaining a nuisance and was sentenced to a year in the penitentiary and to pay a fine of $500. On appeal, which was argued by Mr. Kindelberger of the

1. Charities and the Commons, Jan. 12, 1907, abstracted in THE JOURNAL, Feb. 23, 1907, p. 712.

District Attorney's office, the Appellate Division, on April 19, 1907, affirmed the conviction and called attention to the fact that although no similar adjudicated case could be found, the theory of the prosecution was sound. The decision of the court was that "While the offence of abortion is one thing; that of maintaining premises open to the public for the purpose of consummating that crime is another and separate offense against the peace and good order of the state." This is a most important decision and renders easy a problem that three years ago was considered almost impossible of solution. Two weeks ago the conviction was further affirmed by a unanimous decision of the Court of Appeals. The end of this portion of the work has not yet been reached. A still farther principle is in process of evolution, which it would be impolitic to discuss at this time.

Another phase of this question requires notice. Our first efforts were directed toward the smaller and more obscure offenders, like midwives. There had arisen in this city a class of abortionists much more powerful and dangerous. Doctors of medicine, legally qualified practitioners, were openly and unblushingly announcing themselves as abortion specialists. They were circularizing the profession and taking every means of bringing their vile trade into prominence. The judges began to demand that some of these big criminals, as well as the smaller ones, be brought before them. A judge of the Court of Special Sessions told me personally, as other judges told the counsel, that if we did not attack some of these big criminals and improve the character of our work, we would lose the respect of the judges and our standing before the courts would be compromised. We came to the point where we were obliged to stop this criminal business by medical men or go out of business ourselves. We struck, therefore, at two of the largest and most powerful ones, and you know the result. The one became a fugitive from justice, and the places that once knew him now know him no more. The other, after as hard a battle as ever was fought in the courts, was convicted. After two appeals the conviction was sustained by the Court of Appeals, and he served his term in Sing Sing, and has been refused pardon by two governors. Moreover, the principle of law was established that it is a crime to attempt to commit abortion.

The charlatans who play on the credulity of young men are a particularly vicious type of scoundrel. Extortion and blackmail are constant features of their work, and they probably wrest more money from their victims than do other quacks. Among seven cases that came under our counsel's investigation, the amount exacted ranged from $490 to $9,872, the aggregate being $15,229. One concern which was put out of business used to sell an ounce of simple ointment for several hundred dollars, the price varying with the patient. This ointment was alleged to be goat lymph. Another concern charged one of its victims $700 for a small bottle of tincture of gentian, which was called radium.

The savings of a liftime are extorted without compunction by this class of harpies, and men are driven into mortgaging or pawning the last of their property. By false diagnosis and by preying on the fears of their victims these vampires thrive on extortion and blackmail. As they are mostly registered physicians, it is possible to reach them only on such a charge as grand larceny or extortion. They confine their practice to the private diseases of men, and the victim, even of the most iniquitous frauds, will rarely face the exposure which prosecution would involve. The unregistered quack can easily be reached by detectives, but it is obvious that a detective cannot readily gather sufficient legal evidence of larceny or extortion against a registered physician. Hence, these men are the most difficult of all impostors to reach.

In addition to this, the advertising of these men is more indecent than that of any other class of medical impostors. They advertise through the daily papers and through the agency of obscene pamphlets, which are given out in the streets. The harm done by this kind of advertising can not be described without seeming exaggeration.

Our work in this direction has been extremely successful. The methods empioyed have varied. Some individuals have been arrested for grand larceny or false pretense, some for false diagnosis. Others have been reached through the Post Office Department, which has declared their business fraudulent. By this means, half a hundred extortionists were put out of business at one blow, without going into court. It was accomplished through the post office authorities, who caused letters to be sent to fifty-two advertisers in the New York papers. When the replies were received the advertisers were summoned to the post office and informed that they must make certain affidavits, admitting responsibility for the business advertised, before any more mail would be delivered to them. This, with one accord, they refused to do, and all of their mail was withheld. This was only the first step. The newspapers carrying the advertisements were at once notified that these were fraudulent concerns and their advertisements must be withdrawn immediately or the papers would be excluded from the mails. With their advertisements stopped and being unable to receive any mail whatever, these fifty-two fraudulent medical concerns withered like plants in the desert and those vile medical columns were at once obliterated.

Another important class of charlatans whom we have successfully attacked, are the alleged consumption cures. These impostors do a vast amount of harm, for they impoverish the poor and prevent their dupes from adopting those measures which will be productive of most good. A principle is now in process of evolution which gives promise of ultimately exterminating these quacks who prey on the consumptive poor. Another vital principle to be established was the limitation to be placed on the use of the title "doctor" by those who are not registered. After several successful prosecutions a man was convicted and sentenced to imprisonment who held a diploma of a western medical school not recognized by the Board of Regents. He was not registered, and held no license to practice in New York, but, nevertheless, advertised as a practitioner in the daily papers, using the title "Dr." The desire on our part for a test case on this question was fulfilled by an appeal in this case (People vs. Somme). After argument on appeal by Assistant District Attorney Johnson the conviction was sustained by the Appellate Division in June last and the case is now pending before the Court of Appeals.

This man was prosecuted, not for illegal practice of medicine, but for the illegal use of the title "Doctor." The question raised in the trial was whether or not a graduate of a medical school not recognized by the Regents can use the title doctor in such a way as to convey the impression that he is a practitioner of medicine, without being registered as such. The decision of the court on that point was as follows: "Neither the lawyer nor the doctor coming from another state or holding the

degree of a law or medical school in another state, can hold himself out or advertise himself in such a manner as to convey the impression that he is a legal practitioner of either profession, unless duly and legally licensed to practice in this state under our laws, without being guilty of a misdemeanor." This is the first time a court of record in New York has passed on this mooted question. It simply means that in New York a man, even though he hold the degree of M.D. and may use it in a social or literary way, can not use it for business purposes, unless he is licensed to practice medicine and is lawfully registered.

The most recent legal principle to be sought for was formulated some time ago by the counsel, but it was not thought best to test it under the old law. The new law, however, contains a clause embodying this principle, which seemed to warrant the prosecution of a well-known dermatologic concern (People vs. Woodbury). This business was established and owned by a layman, who sold it about three years ago to another layman, who is now conducting it, registered physicians being employed to do the professional work. Simply stated, the principle is this: The license to practice medicine is a strictly personal one. The physician takes a prescribed course in a medical college, passes personal examinations, and receives a personal diploma which he can not legally sell or exchange. He then passes, personally, a state examination and receives a personal license. This license he can not sell or exchange, and the privileges it grants die with him. One of the direct corollaries of this is that a corporation, having no personal license, can not legally practice medicine or advertise to do so. If this principle is upheld by the courts, it will at once put out of existence the most fraudulent of the medical concerns.[2] Each physician will have to practice under his own name, and be responsible for his work, and a corporation can not conceal the identity of its owners or escape all legal and medical responsibility. The principle, if recognized as law by the courts, will also be an entering wedge in the campaign against "patent medicines."

Other principles of law have been established and other methods of attack have been adopted, for numerous criminal laws have been utilized, other than the so-called medical laws. I have described enough, however, to show the character of the work and the motives which have guided its conduct. Most of the methods which I have set forth were never before used as weapons against quackery until they were developed and employed in this work by our counsel. The ingenuity with which they have been worked out, and the persistence with which they have been followed up, until established by decisions of the highest courts, are worthy of the fullest commendation. The high character of his professional work and the correctness of his legal action are shown by the fact that among more than 900 prosecutions but one case for false arrest has been brought against the society, and in that case the society easily won. While the censors and Comitia Minora have heartily supported every effort to improve the character of the legal work, the principles of law which have been established have in every case originated with Mr. Andrews, and have been developed by him, and the verdicts which have confirmed them have been obtained by his professional work, which has been creative and inventive to a high degree.

The able work done in the appeal bureau of the district attorney's office in preparing and presenting the important questions of law involved in these decisive cases, has been a potent factor in their establishment by the higher courts. That office has frequently assisted us in our work, also, in the trial of cases, and it is a pleasure to acknowledge the aid thus given. The legal work has been greatly aided also by the assistance rendered by Police Commissioner Bingham, who has detailed a special police officer to the work of the county society, something that had never before been done.

A most satisfactory feature of the affirming of these legal principles by the higher courts is the fact that they acquire the force of law, not for New York County only, but for the state. The value of our work, therefore, is not limited to our own boundaries. While they have no such binding force outside of New York State, they have attracted wide attention among judges and prosecutors, and have opened the eyes of many throughout the country to new and effective methods of attacking quackery. Notwithstanding the success of our work, we have often been hampered, because we are limited by law to certain classes of cases and can not go beyond the limits of New York County. Moreover, we are always hampered by lack of funds, for we are all the time working up to our financial limit. We dare not attack a criminal until we have positive legal evidence, and legal evidence is very different from opinion or suspicion, and it costs money to secure it. Among the hundreds of complaints received yearly, it is almost an unknown thing that the accuser or victim of a charlatan consents to appear as a witness. The society procures its own evidence in every case it prosecutes.

Some organization is urgently needed to carry on the work of law enforcement in a broader way, and over a wider territory, than can be done by any county society. This need seems about to be filled by the new organization resulting from the union of the Public Health Defense League with the Committee of One Hundred of the American Association for the Advancement of Science.

One other subject should receive brief consideration, namely, the so-called Medical Unity Bill, which became a law by the signature of the governor on May 13, 1907. It is the prevailing idea that this law simply abolished the three medical examining boards and instituted one board. As a matter of fact, it is a general medical law, one of the most important and comprehensive that has been enacted since the great law of 1806. In all previous laws, the mistake was made of including but few provisions against illegal practice and medical fraud. In the new law, on the contrary, such provisions are ample, owing largely to the efforts of Mr. Andrews.

A very important provision is the one relative to the revocation of the license to practice medicine. The lawyers have long been able to disbar their disreputable brethren, but the medical profession of New York has stood with tied hands when a physician has turned quack or resorted to a personal or professional life of dishonor. Virtually speaking, nothing short of conviction for a felony could nullify the license to practice after it had once been obtained. Now the license can be revoked by the Board of Regents for many misdemeanors or professional misdeeds, including fraud in practice, but the rights of every physician are fully safeguarded by the prescribed methods of procedure. Hereafter, the advertising doctor and the medical black sheep can not pursue their evil ways with the impunity they have hitherto enjoyed.

2. A conviction has since been obtained.

Another important provision of the law enables the Board of Regents to inquire into the identity of any person claiming to be a licensed physician. No such power was given in the old law. This will make it difficult for a person to practice on the license of a deceased physician, and will render it far easier to detect fraud in medical companies. It will also render it more difficult for quacks to combine and shelter each other, or hide behind licensed practitioners, as they have frequently done in the past. Prosecutions may now be conducted by the society under five sections of the penal code, instead of one as formerly, and also under the special provisions of the new law. The restrictions of the old law making it impossible for a judge to impose a sentence of both fine and imprisonment for a first offense for the illegal practice of medicine has been abolished, so that much heavier and more deterrent penalties may now be imposed.

For several years the volume of legal work has annually increased, and during the year now closing it has exceeded in every particular that of any former year. The number of prosecutions, convictions, fines, and imprisonments, and the aggregate amount of fines have all been greater than in any previous year. The work has not only been an evolution in principles and methods, but has yearly expanded in scope and volume.

In the prosecution of this work all sorts and conditions of men have been revealed as doers of evil, some of whom have posed as moral citizens; many lucrative but corrupt business concerns have been disrupted; many influential citizens and powerful interests have been hard hit. As the work has broadened and the number of such cases has increased, violent animosities have been engendered, not alone against individuals, but against the work itself. And so long as the work is aggressive and effective, opposition to it must be at times expected. To those who feel that the society should limit itself to scientific and professional work, I would call attention to the fact that legal work was one of the essential objects for which it was organized. The title of the legislative act which called this society into existence in 1806, read as follows: "An act to incorporate medical societies for the purpose of regulating the practice of physic and surgery in this state;" and this is incorporated into the constitution as a prime object of the society to-day. With such a mandate from the state and in view of the results accomplished, it seems to me that the society should not shirk its duty as regards the legal work, for it has been a great work, it has been a good work, it has been a clean work.

THE INDICATIONS FOR OPERATION IN ELECTIVE SURGERY.*

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Before the use of anesthetics and before the introduction of aseptic principles, major surgery was limited almost entirely to emergency or imperative surgery. That is, operative procedures were employed only when severe, urgent symptoms could be relieved without too great risk from the operation itself, or when an immediate operation was imperatively indicated in order to save life.

Formerly most operations were in themselves dangerous. Now, in the majority of cases, the risk from the operation itself is slight. The element of danger usually depends on the severity of the condition which makes the operation necessary. This reduction of the operative risk, together with the assurance which we have of obtaining good aseptic results in the great majority of cases, has created for us an entirely new surgical field, that of elective surgery.

The operations of elective surgery are those operations which are usually done in order to relieve distressing symptoms, more rarely in order ultimately to save life. Their especial characteristics are that the operation does not necessarily have to be done immediately, and that there may often be a question as to whether or not the operation really is advisable.

I will mention a few of the many conditions which may come into this field in order to make the conception of elective surgery more clear. Gynecology offers many instances. Displacements of the uterus, tears of the perineum or cervix, inflamed tubes or ovaries, and many cases of ovarian or uterine tumors are frequent examples. The great majority of such cases do not require immediate operation. Many of these patients do not need an operation in order to save life, and in others the question may be fairly raised as to whether or not it is advisable to do any operation at all.

In general abdominal surgery we may consider nonstrangulated hernia, floating kidney, many cases of gallstone or gastric ulcer, and suspected chronic appendicitis which has never shown any symptoms of acute attacks. Without extending this list further, I think enough conditions have been given to impart a fairly clear idea of the sort of case coming in the province of elective surgery.

In imperative surgery the diagnosis is often clear and the necessity for an immediate operation is usually apparent. In such cases there is but one major responsibility devolving on the physician. That is the responsibility of having a sufficiently skillful and satisfactory operation performed at once.

In elective surgery, however, there are usually two major responsibilities. There is as great a need for a skillful operation as in imperative surgery, but of equal, if not of greater importance, is the responsibility of first deciding whether or not the patient actually needs any operation at all.

Who is the man to settle this question? The operator assumes the moral and professional responsibility for the operation. His judgment dictates the procedures used; his is the actual credit if the operation is successful, and his is the blame if it is not. Inasmuch as the operator will thus have to bear the responsibility for the results of the proposed operation, it is only fair that he be allowed to decide whether or not operation is necessary.

To aid the surgeon to make a wise decision he must be given every opportunity for full and free examination of the patient. He should be permitted to express his opinion freely, and should be allowed to follow unhampered the dictates of his own best judgment. The surgeon who waives this privilege of prior examination, unless compelled thereto by extreme circumstances, who sees the patient for the first time after anesthesia has begun, and who does a certain routine operation at another's request, degrades himself and his profession. He assumes the status of a skilled mechanic rather than that of the scientific physician. His operation is human

* Read at the Thirty-fourth Annual Session of the Florida Medical Association, Tampa, April 17, 1907.

carpenter work, done to order, rather than scientific surgery.

On the other hand, we should not tie the surgeon's hands and hinder him in his attempt to do his best work by sending patients to him with the request that he perform a certain specified operation. Rather let us tell the patient that an operation may be necessary, but, inasmuch as the surgeon has to stand for the results of his operation, let us permit the surgeon himself to decide whether or not an operation will be necessary in a given case of elective surgery.

It is manifestly impossible to go over all conditions and operations coming at times under the heading of elective surgery. I do wish, though, to take up a few special procedures and consider them in some detail from the standpoint of operative indications.

From the particular points which this study will bring up I hope that we shall be able to deduce conclusions applicable to the whole field. As most gynecologic conditions belong to elective surgery, so most of the operations of gynecology come under this heading, and I shall confine my consideration of special operations to this line.

DILATATION AND CURETTAGE.

Probably the gynecologic operation which is done more frequently than any other is dilatation of the cervix uteri, followed by curettage of the endometrium. While in many cases the operation is indicated and the good results justify it, yet I have no hesitation in stating my belief that a large percentage of all these operations are unnecessary, unjustifiable, and frequently actually injurious.

The majority of all curettages are done on account of one of four or five reasons: (1) As treatment for endometritis or general inflammatory conditions of the pelvic organs; (2) as treatment for dysmenorrhea or sterility; (3) as treatment for, or diagnosis of, uterine hemorrhage; (4) empirically, in poorly understood, obstinate cases, with the hope that in some unknown way good results may follow.

Curettage in Inflammatory Conditions.—Very careful examination is necessary before resorting to the curette in actual inflammatory processes of the endometrium. In acute endometritis the consensus of opinion is that curettage is absolutely contraindicated if there be any involvement of the tubes, and, even when the tubes are free from infection, it is usually inadvisable. Curettage in acute endometritis usually increases the degree of inflammation and leaves the patient's last condition worse than the first.

In chronic endometritis the operation may be of great benefit, but care is needed in selecting cases. Whenever there is any suspicion of tubal infection the operation is usually contraindicated.

I will merely mention in passing that actual chronic endometritis, that is, a true chronic inflammation from the pathologic standpoint, is not often seen without accompanying inflammatory changes in the tubes also. The clinical symptoms which are usually considered those of chronic endometritis are actually due to a number of different pathologic conditions of the endometrium, most of which are not at all inflammatory in origin.

Curettage in Dysmenorrhea or Sterility.—This operation is frequently employed in treating dysmenorrhea or sterility. Though dilatation for dysmenorrhea was originally based on the theory that an obstruction in the menstrual flow was the cause of one form of dysmenorrhea, the procedure has since been applied to every form of dysmenorrheal pain. A few years ago I made a study of the results of this treatment.[1] I was able to get reports from nearly one hundred women at periods varying from one to twelve years after curettage for dysmenorrhea had been done at the Johns Hopkins Hospital. This study showed that the operation is far more likely to give good results in those patients whose monthly pains are sharp or paroxysmal, begin on the day of flow or the day before, and last but a day or two. The likelihood of relief is much less when the pain is dull in character, begins several days before the flow appears, and lasts for several days or throughout the flow.

Before dilating and curetting for dysmenorrhea we must satisfy ourselves that the symptom is not due to some general or local pathologic condition. Manifestly dilatation of the cervix would do no good in dysmenorrhea caused by a retroflexed uterus or an inflamed tube; in like manner dysmenorrhea in a neurasthenic patient is not likely to be relieved unless the neurasthenia is also relieved.

A word as to the value of this operation in relieving sterility. While sometimes women, previously sterile, do become pregnant so soon after a dilatation that it seems as if the operation must have relieved the sterility, yet as a routine operation I do not believe that it will give a large percentage of successful results. In my study on dysmenorrhea, just referred to, there were twenty married women who had been sterile before the dilatation and curettage. Of these twenty women but three became pregnant within six months after the operation. It behooves us, therefore, to be very chary in promising results from dilatation as a method of curing sterility.

Dilatation and Curettage in Uterine Hemorrhage.—In the diagnosis and treatment of uterine hemorrhage curettage reaches its noblest and most useful plane. In every case of uterine hemorrhage, when the cause of the bleeding can not be satisfactorily explained by the findings at the ordinary pelvic examination, a thorough curettage should be done and the curettings examined microscopically by a skilled pathologist. In this way we may frequently diagnose an early case of cancer of the uterus when, with the exception of bleeding, all symptoms of cancer are lacking. Since the meeting of last year I have been able to diagnose two very early cases of cancer by this method. Neither of the women had any symptoms of cancer except an irregular uterine bleeding, which local examination did not explain satisfactorily. Each patient was curetted and the pathologic examination of each specimen showed cancer. A thorough operation was done in each case and I feel that we have good assurance that the life of each patient will be saved. If so, it will be due in great part to the diagnosis given us by the curettage.

As a treatment for uterine hemorrhage the curette is most successful in cases of retained secundines after labor or miscarriage and in the so-called chronic polypoid endometritis. When the bleeding comes from one or more large uterine polypi the curette may be sufficient, but it is often hard to remove these tumors by curetting alone. Curettage will check the bleeding in acute or chronic endometritis, but from the considerations given above it should be done only as a last resort in such cases.

1. American Medicine, Nov. 4, 1905.

Before performing curettage in any case of uterine hemorrhage it is necessary to rule out the presence of an extrauterine pregnancy. Contrary to what we might gather from most text-books, extrauterine pregnancy does not usually have for its first symptoms those of shock from the uncontrolled bleeding of a ruptured tube. Out of eighteen patients on whom I have operated for extrauterine pregnancy during the last two years but two had the classical text-book symptoms. The others were all able to walk either to my office or to the hospital. Irregular uterine hemorrhage was a symptom in each of these cases. Curettage in a case of extrauterine pregnancy would be a most unreasonable procedure, certain to do no good, and very likely to do great harm.

Curettage from Empirical Reasons.—Finally, I am sorry to say, curettage is sometimes done in an unreasoning, empirical way, with the hope that in some mysterious manner a patient who has heretofore resisted all treatment may be benefited. In such instances the case is usually poorly understood, no accurate diagnosis is made, and the operation is done with no definite idea as to how it is to produce the desired results. If one should ask the operator what his justification for the operation was he would probably reply that he had tried everything else he knew, that this would do the woman no harm and that it might do her good.

Of course such operating is not surgery. The conscientious surgeon always remembers that there is a certain element of danger in every operation, no matter how trivial the procedure may be. He never advises an operation unless he feels assured that it is definitely indicated in the case in question.

OPERATION FOR CERVICAL LACERATION.

The procedures which I wish to consider next are those intended to repair the lacerated cervix.

A certain degree of laceration of the cervix must be regarded as an invariable result of every labor. In most cases these wounds of the cervix heal kindly, with no infection, and leave a good scar. Some degree of healed cervical laceration, therefore, must be regarded as practically a normal condition in every woman who has borne children.

Operation is sometimes necessary in old cervical lacerations for one of two reasons. First, on account of the local inflammation about an unhealed tear; and, second, as a prophylactic measure against cancer of the cervix.

A cervical laceration, with engorged, congested surfaces, the dilated glands pouring forth a profuse mucoid secretion, certainly calls for operation when local treatment fails to relieve the condition.

Operating on a well-healed scar of the cervix with the view of preventing a possible occurrence of cancer in the future is, however, a question for careful consideration. Most cervical cancers do start in old lacerations, it is true. That is no justification, however, for repairing every laceration, as the separate individual's chance of having a cancer is very slight. Some lacerations are so extensive, though, even when well healed, that, coupled with a family history of cancer, we do sometimes seem justified in repairing them even merely as a prophylactic measure.

Looking at the subject of cervical laceration in general, it must be confessed that not all the operations done are justified or necessary. There are two main paths of error which may lead the ambitious operator to the performance of needless cervical repairs. The first lies in the old belief that various hysterical and neurotic symptoms may arise as reflex phenomena from a lacerated cervix. The second lies in the fact that the surgeon may fail to discover the diseased conditions of tube or ovary, which is the real cause of the symptoms, and attribute all the trouble to the cervical laceration which he easily makes out.

The idea that general nervous conditions can arise directly as reflex phenomena from lacerations of the cervix, or, indeed, from any other diseased condition of the pelvic organs, is now being abandoned by nearly all prominent neurologists and many gynecologists. Neurasthenia and hysteria, when associated with gynecologic troubles, either exist independently of them or else are merely the symptoms of the final nervous breakdown which any form of long continued pain and suffering may cause in women of naturally neurotic temperament. Healed scars of the uterine cervix can cause reflex neurasthenia or hysteria no more than can a well-healed wound on the leg or arm.

The second reason which may lead one to do unnecessary cervical operations is, as I have said, the failure to discover the pelvic lesion which is the real cause of the trouble. Such a mistake may seem at times almost excusable. Laceration of the cervix is one of the easiest pathologic conditions in all medicine to diagnose. Many other pathologic conditions of the pelvic organs are very hard to make out, especially when the patient is not under an anesthetic. What then is more natural for the man who has not a wide experience in gynecology and who, perhaps, does not appreciate keenly the proper relation between pathologic conditions and subjective symptoms, than to miss the inflamed tube and ovary above and attribute his patient's complaints to the innocent, healed scar of the cervix?

The way to avoid these mistakes is, of course, to use the utmost care in ruling out every other condition before ascribing to the laceration the patient's symptoms.

OPERATION FOR UTERINE DISPLACEMENTS.

The normal position of the uterus is that of slight anteflexion and anteversion, the fundus resting on the bladder, the cervix pointing toward the lower part of the sacrum. Theoretically, any deviation from this position may be regarded as abnormal and as offering a possibility for operative interference. Shall we, therefore, operate on all uteri whose position is in any way different from that which we call "normal"? It seems almost as if this has been the position which has been taken from time to time by different operators. If a woman with a retrodisplaced uterus was unlucky enough to fall into the hands of one of them, operation was immediately advised, no matter whether her symptoms were referable to the displacement or not. A much more sane view is now generally held.

Let us first discuss anteversion and anteflexion. It is now considered that the uterus may have a wide degree of anteflexion or anteversion without really being abnormal at all. When the condition is extreme we usually find that we are really dealing with mal-developed pelvic organs. This maldevelopment, rather than the anteflexion, is the main feature and is no indication for operation. On account of the general acceptance of this view operations for anterior deviations of the uterus are now done much less frequently than formerly.

With retrodisplacements the question is different. Although some eminent gynecologists deny that a simple retrodisplacement can in itself cause symptoms, the

majority do not agree with this view. While we know that in many instances retrodisplacement can exist with no symptoms whatsoever, yet most gynecologists are convinced, by the accumulated mass of clinical evidence, that in other cases the mere displacement does in itself cause distressing subjective symptoms.

An especially careful analysis of symptoms is necessary before advising treatment in this condition. In the case of a hysterical woman with a retrodisplaced uterus it is often difficult to decide whether or not an operation is necessary. There are many hysterical women in whom the uterus is in normal position. On the other hand, many a woman with retrodisplaced uterus is perfectly well. How careful, therefore, must we be before advising operation for this condition in a patient whose predominant symptom is hysteria. If, by careful study of the history, we find that the neurotic symptoms came as a sequel to a long period of pelvic symptoms which were at first free from any hysterical complication, then we can feel that correction of the displacement may do some good. If the woman is first relieved from the chronic, dragging pain, which by its constant strain has finally broken down a naturally weak nervous system, we are more likely to treat the hysteria successfully by medical means.

Treatment directed toward a retrodisplaced uterus in a case of pure hysteria which has never shown any symptoms directly referable to the displacement is unjustifiable. The good results sometimes obtained in such cases are really the effect of suggestive therapeutics and surgical operations are not justifiable methods of hypnotism.

In general, operative interference is indicated in the treatment of retrodisplaced uteri only when local treatment has failed to relieve symptoms directly referable to the displacement. Such symptoms are more frequently met with in multiparæ than in nulliparæ. The displacement then is usually associated with torn perineal muscles and a certain degree of uterine prolapse. The symptoms which most frequently call for treatment are sensations of weight and discomfort in the pelvis, backache and pain in the lower abdomen, often running to the legs. These symptoms are usually intensified by exertion or at the menstrual period. Actual dysmenorrhea is far more frequent in nulliparæ than in multiparæ.

In nulliparæ we must always be on our guard against a retrodisplacement, which is merely one manifestation of a general maldevelopment of the pelvic organs. Often the anterior wall of the vagina is so short that the uterus is of necessity kept in the posterior position. Operations in such cases are not indicated, as they do nothing to relieve the main factor of the trouble, the maldevelopment.

REPAIR OF THE LACERATED PERINEUM.

While there are few routine procedures which have brought more relief from suffering to thousands of women than the repair of old perineal lacerations, still the surgeon must always be on his guard to see that the necessary indications are satisfied before advising operation. The mere existence of a tear, even if it extends completely into the bowel, does not necessarily justify an operation. Many women go for years with the sphincter ani completely torn through and yet have a wonderful degree of control with no symptoms whatsoever from the uterine prolapse. In such cases we must assure ourselves that the general condition is perfectly good before we are warranted in saying that operation is indicated. Operation is called for more on account of the severity of the symptoms which the lesion causes rather than the degree of the lesion itself.

In an old laceration of the perineum in which the sphincter ani is not involved the indications are very definite. The most important symptom is the sense of loss of support for the pelvic organs; the patient describes it as feeling that "everything is falling out" of her. In addition we have dragging sensations, pain in the back, more or less abdominal pain, and resultant general physical depression. The pathologic condition which causes these symptoms is the descensus allowed by the weakened pelvic floor below. The operation indicated is one which will restore this muscular floor. Mere suturing of vaginal connective tissues or skin is not sufficient. An operative technic which I described in a previous article[2] is, I think, about the most satisfactory and simple method of accomplishing this result.

OÖPHORECTOMY.

The history of oöphorectomy presents the same features that we find common to many other operations, capable of accomplishing much good. After its value was finally demonstrated the medical world ran wild for a time; oöphorectomy was done in every sort of condition and hundreds of women were needlessly mutilated. The inevitable reaction came later and now we realize that, while this operation is a procedure of greatest value in its proper place, reckless oöphorectomy, without proper indications, can do an enormous amount of damage.

To remove both ovaries is an operation of the greatest magnitude, not on account of any difficulty in the operative technic, but because of the serious after-effects which it may bring to the patient. The nervous and mental disturbances which the premature removal of both ovaries sometimes occasions is often much worse than the original symptoms for the relief of which the operation was performed.

The following conditions will cover most of the indications for oöphorectomy: Malignant disease of the uterus, ovarian cysts or tumors, some cases of pelvic inflammatory disease and some cases of myomata.

One important point, from the patient's standpoint, is whether or not one ovary or a part of one is left *in situ*. If it is possible to do this the nervous symptoms which follow after the entire removal of both ovaries do not occur. The theory is that the ovary has an internal secretion poured into the blood, which exerts a powerful effect on the general nervous system. One ovary, or even a part of one ovary, can keep up this internal secretion and thus spare the patient the possibility of many distressing symptoms.

With these points in mind, let us examine the conditions which I have just mentioned as possible indications for oöphorectomy.

In malignant disease of the uterus conservatism is thrown to the winds, and all the pelvic organs, including both ovaries, should be removed. Malignant disease demands most heroic treatment if other than palliative result is desired.

The indication for operation in ovarian cysts or tumors lies in the presence of the tumor itself. Every ovarian tumor should be removed as soon as possible after diagnosis is made unless disease of some other organ renders an operation especially dangerous. Early interference is indicated for a number of reasons, but especially because malignant disease of the ovary is fre-

2. The Amer. Jour. of Obstet., October, 1905.

quent, and because it is often impossible to tell with certainty by local examination whether an ovarian tumor is malignant or not. Neither extreme youth nor old age are in themselves contraindications to the removal of ovarian tumors. Old women usually stand this operation remarkably well, while in little girls malignant disease of the ovary is by no means uncommon.

The ovarian tumor is usually unilateral, and whenever possible the other ovary should be left.

The indication for oöphorectomy in inflammatory troubles depends solely on the pathologic condition of the ovaries, not on the patient's symptoms. The focus of infection is the tube in most cases. The oöphoritis then begins at the outside of the ovary and oftentimes completely clears up on removal of the offending tube. The indications for oöphorectomy in inflammatory diseases of the pelvic organs are, therefore, about as follows: When the tube and ovary are so bound together by adhesions that removal of the tube alone is technically impossible, the ovary must also be removed. If both ovaries are in this condition, efforts should be made to leave at least a part of one ovary to keep up the internal secretion. The ovary should also be removed in operations for inflammatory disease when it is so extensively inflamed that a restoration to normal is apparently impossible. As a commentary to this last indication I would add that I believe that the more operations one does the less likely one is to remove ovaries through this indication.

In hysterectomy for myoma it is sometimes necessary to remove one or both ovaries on account of dense adhesions between the ovary and the growth. As a rule, one or both ovaries can and should be left.

Removal of normal ovaries on account of chronic pain "in the ovarian region," or double oöphorectomy in order to relieve dysmenorrhea is not indicated.

HYSTERECTOMY.

As in oöphorectomy, the more major operations one does the less inclined one is to do hysterectomy. The same general principles hold good here as in the preceding considerations. Removal of the normal uterus, because the woman has some vague "female trouble" which does not yield to treatment, is never justifiable. Clear, well-defined indications are always necessary to justify hysterectomy.

Such indications are given for the most part in malignant disease of the uterus or ovaries, myomata, pelvic inflammatory disease in which the uterus is generally involved or in which the process is tuberculous in character, some cases of complete prolapse and a few cases of intractable uterine hemorrhage arising from microscopic changes in the endometrium or uterine musculature.

CONCLUSIONS.

I will not carry this discussion of special operative procedures farther. It has been seen that there are certain considerations common to the discussion of all of them. I wish, in conclusion, to deduce from these common factors a few simple principles, the strict observance of which is of vital importance in the successful practice of elective surgery.

Before it can be said that any given operation is necessary or advisable three conditions must be satisfied beyond reasonable doubt:

First, we must be satisfied that the symptoms of which the patient complains are caused by the lesion toward which the operation is directed.

Second, we must have a reasonable assurance that these symptoms will be relieved entirely or greatly benefited by the operation which is proposed.

Finally, we must be reasonably certain that the probable danger from the operation itself, when compared with the severity of the lesion and the expectation of relief, is small enough to justify the patient in taking the operative risk.

These postulates seem absurdly simple and self-evident. They are, of course, the fundamental principles of all therapeutics. But in elective surgery, more than in any other department of medicine, we are prone to lose sight of them or to minimize their importance. In just so much as we disregard them in the same proportion will the results of our surgical work fall below the high plane of excellence. If we should carefully consider them before every proposed operation of elective surgery I am sure that, while we might not do as many operations as we may be doing now, on the other hand, the end results of the operations which we would do would be much more brilliant than at present.

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EARLY AND LATE CASES OF GASTRIC ULCER.*

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Two conclusions have impressed themselves on me regarding gastric ulcer: 1, Heretofore the condition has not been diagnosed early enough; 2, it has not received sufficiently rigorous treatment after the diagnosis has been made.

NEED OF EARLY DIAGNOSIS.

Early diagnosis is of immense value as an aid to cure, certainly as much so as in gastric cancer, possibly as much so as in pulmonary tuberculosis. It has been too much the custom in the past to consider no case gastric ulcer unless certain definite evidence was present, such as vomiting of blood, blood in the stools, violent attacks of gastralgia and lancinating pain through the abdomen from epigastrium to back. These signs are classical and are usually accepted as convincing, but diagnosis ought to be made and treatment instituted before this stage has been reached.

My own conviction is that many cases of chronic dyspepsia, characterized for weeks or months by flatulence, waterbrash, burning and distress after food, where the epigastrium shows tenderness and the test meal shows hyperacidity, are in reality gastric ulcer, even when the feces show no occult blood. Such cases can not positively be diagnosed as ulcer any more than incipient tuberculosis can positively be diagnosed before bacilli are found in the sputum; yet they deserve routine treatment on suspicion, in one instance as truly as in the other. If these dyspeptic cases are allowed to go on indefinitely without treatment or with only haphazard treatment, serious symptoms are likely sooner or later to appear that make the diagnosis clear but that render the results of treatment much more dubious. I would not urge the ulcer cure at once in every case of acid dyspepsia, but if one month's treatment by ordinary methods, with the patient up and about, does not cause a marked decrease of the trouble I have learned to insist

*Read before the California Academy of Medicine, June, 1907.

on a rigid course directed to the cure of ulcer, even though no positive evidence of its presence has yet appeared.

TREATMENT.

As regards treatment, it should be understood by the patient as well as by physician that rest and time are the two great requisites for the cure of gastric ulcer. Half-way measures will not suffice as regards either rest or time. Rest means absolute rest in bed at the outset, then limited activity for weeks to follow. Rest of the stomach is also a necessity, at first perhaps by rectal feeding exclusively, later by milk and then by soft and carefully selected diet under the physician's direction. As regards time, the patient should be told that he must submit to direction for at least one year and possibly two. It is not necessary here to repeat the details of diet, for they are given very definitely in numerous textbooks. The point I wish to make is that neither patient nor physician can afford to be too liberal about increasing the variety of diet, or too hasty about modifying the plan laid down.

During many months of its course gastric ulcer is undoubtedly a medical disease and subject to cure by medical means, provided these means are adequate and are persistently followed. But the trouble is that these months are allowed to go by without adequate treatment, either through laxness on the physician's part or through carelessness or objections and arguments on the patient's part until at last complications and sequelæ arise that make the case a surgical one. The possible consequences of gastric ulcer do not seem to be sufficiently appreciated. If they were they would not be permitted to occur so often when in many cases they could be prevented by early diagnosis and by early and earnest management.

The following case history will show what I mean by early diagnosis and treatment of gastric ulcer. Of course, in the early stage, diagnosis can not be proven absolutely and the conclusion must be reached by inference rather than by demonstration; but I have seen a number of cases similar to this one and have never had cause to regret aggressive action based on such a history and findings:

UNCOMPLICATED GASTRIC ULCER, WITH APPARENT CURE.

CASE 1.—*History.*—Mrs. K. G., aged 24, came to me Feb. 18, 1907, complaining of attacks of trouble with her stomach for eight months previous. These attacks consisted of pain and distress very severe in character, beginning centrally over the region of the stomach and running through to the back, as if something was sticking through. She vomited severely and repeatedly, until the stomach was entirely empty, but then obtained relief; although she felt very sore and lame for a day or two afterwards. Such attacks came every few days without warning, sometimes immediately after food, sometimes several hours after. She compared the intensity of the pain to that of childbirth, said it always persisted until the stomach was entirely empty, which meant one to two hours or sometimes longer. She had never vomited blood; and had never become jaundiced during or following an attack. In the intervals between attacks she had much heartburn, waterbrash, distress after food and a feeling of "drawing" over the stomach. She had a good appetite but was afraid to eat.

Examination.—This showed that she was fairly well nourished and no physical abnormality was found except marked tenderness over the epigastrium and right hypochondrium and in one spot especially, just to the right of the median line in the epigastrium. There was no tumor and no succussion splash. After the Ewald test meal, only about two ounces were obtained, well triturated, semi-solid, containing no abnormal food particles; with a total acidity of 45 and free HCl 40.

Treatment.—She was put to bed for two weeks on a milk diet exclusively; after that soft boiled eggs, broths, soft toast, and thoroughly cooked cereals were gradually added. She never had any distress or nausea or any of her old dyspeptic symptoms after the first two or three days of treatment. She was last seen June 18 and reported that she had had no recurrence whatever of her old trouble. She is still on a diet limited to soft articles of food and living strictly according to directions.

The following cases, on the other hand, show some of the consequences that have resulted when treatment has not been sought early, or has not been vigorous enough when it was undertaken. In all of them the diagnosis of gastric ulcer has been confirmed by operation or by autopsy, but in all of them other conditions beside ulcer were present, as a result of long-continued ulceration or inflammation, that made medical treatment too late to be of use.

CHRONIC GASTRIC ULCER WITH DEATH FROM HEMORRAGE.

CASE 2.—*History.*—J. S., male, aged 38, first seen August 1, 1901. He complained of pain in his stomach and vomiting. He had had recurring attacks of stomach trouble similar to the present one for several years previous but never so severe as this one. The last previous attack was in January, 1901. The present attack was characterized by pain after food, always worse at night; felt first below the border of the ribs on the right side, stabbing in character and running through to the small of the back; present for the past three weeks no matter what food was taken. Vomiting had occurred quite regularly since the pain began; always occurring at night and always relieving the pain until food was again taken. The vomitus was mostly liquid, sour and irritating, but never contained blood. There was much belching and flatulence, tenderness over the abdomen and persistent constipation, with loss of weight of fifteen pounds during the three weeks' illness.

Examination.—On physical examination some fulness was found along the right costal margin, greater resistence there on palpation than on the left and decided tenderness over the right hypochondrium and the epigastrium. After the Ewald test meal, the total acidity was 71, made up mainly of free HCl.

Treatment.—The patient was sent to Lane Hospital, kept in bed for two weeks on a diet of milk and lime water, and on soft proteid foods for another two weeks; and apparently made a complete recovery. Following this he had no pain, no vomiting and no dyspepsia for nearly a year, although he ate whatever he pleased.

Subsequent History.—On July 2, 1902, he returned for treatment because of a recurrence of his symptoms. At this time, in addition to the physical signs mentioned above, a persistent succussion splash was noted; and after the Ewald test meal the total acidity was 100, the free HCl 70, and the combined HCl 13. This time the patient refused to go to bed and was treated by milk diet and alkalies while he kept about at his work. There was no relief afforded and all the symptoms persisted. On August 4, after the Ewald test meal, the total acidity was 100, and the free HCl 65. On the evening of August 5, while lying at home quietly in bed, the patient vomited a large quantity of blood sufficient to cause syncope. He was taken at once to the hospital, and under treatment by rest, ice bag over the abdomen and rectal feeding exclusively, the hemorrhage ceased. On August 16, however, he had another profuse hematemesis. In spite of treatment further hemorrhages continued to occur daily, characterized by both hematemesis and melena, until finally, on August 28, following a profuse hemorrhage, the patient died. Autopsy showed an oval ulcer, two by three c.m., lying across the pylorus, one-third in the stomach and two-thirds in the duodenum; with a large branch of gastroduodenalis artery lying open in its floor.

CHRONIC GASTRIC ULCER; OPERATION AND RECOVERY.

CASE 3.—*History.*—J. L., male, aged 32, first seen October 1, 1904, complained of pain and vomiting after meals which had been going on more or less constantly for two years.

but without vomiting of blood at any time. This patient was instructed to take an Ewald test meal and to report at my office for its withdrawal on October 3. But about noon, October 2, he was suddenly seized with very violent pain in his abdomen while he was leaning over washing his face. When seen at his home shortly after, he was found in a condition of collapse, very pale and prostrated, perspiring profusely, complaining of terrible pain in his stomach, with a rapid, thready pulse and subnormal temperature.

Operation.—He was taken as soon as possible to Lane Hospital and his abdomen opened by Dr. Emmet Rixford at 6 p. m. An ulcer was found situated on the anterior wall of the stomach, approximately two inches from the pylorus. Through this there was an opening about one quarter of an inch in diameter, leading directly from the interior of the stomach into the peritoneal cavity. Through this opening food had escaped and a quantity was found lying free in the peritoneum. The foreign material was removed, the peritoneum cleansed and the opening in the wall of the stomach closed by gastro-plication.

Subsequent History.—The man recovered rapidly and has remained well ever since. I saw him in March, 1907, when he reported that he had no trouble of any kind with his stomach, weighed more than he ever had in his life and was working hard every day.

CHRONIC GASTRIC ULCER; DEATH FROM JAUNDICE AND HEMORRHAGE.

CASE 4.—*History.*—V. O., male, aged 32, first seen June 29, 1906. He had always been well previously except that two years before he had an illness similar to the one for which he now sought advice. At that time he recovered under treatment and remained well subsequently until the present attack. About April 1, 1906, he began to have trouble with his stomach like that two years before, consisting of pain rather widespread; vomiting several times a week which always relieved the pain; sour eructations frequently; tenderness over his stomach; never any vomiting of blood; great loss in strength but only slight loss in weight.

Examination.—Physical examination June 29 showed nothing except tenderness in the epigastrium; after the Ewald test meal the total acidity was 60, and the total free HCl 34.

Treatment.—Under treatment at first by exclusive milk diet and later by the addition of other proteids his vomiting ceased entirely and his pain disappeared; but his hyperacidity persisted, the total acidity on July 11 being 72 and the free HCl 50. On that date, after two weeks of dieting, he insisted on leaving the hospital because he felt so well. I saw him again on August 8, when he was complaining once more of burning in his stomach but had had no further pain and vomiting; on this date the total acidity was 128, the free HCl 92 and the combined HCl 20.

Subsequent History.—I did not see the patient again until November 29, 1906, when he returned with complaint of pain in his stomach for the previous month, vomiting at least once every day, usually at night, when his pain was always especially severe; the vomitus consisted of a very sour irritating fluid but never anything resembling blood. At this examination he had a decided succussion splash over his stomach five hours after food and a tender spot in his epigastrium slightly to the left of the median line, but no tumor visible or palpable. The total acidity at this time was 78. He was again put to bed, fed for two days exclusively by rectum, then on small amounts of milk and lime water, gradually increased. This time he remained under treatment until December 21, on a continuous proteid diet consisting mainly of milk, softly boiled eggs and Hamburg steak. Under this treatment his vomiting ceased entirely, his pain disappeared and he once more returned to his home in the country apparently cured.

On February 6, 1907, he wrote me that again he had severe pains in his stomach nearly all the time, so severe at night he could not sleep; this pain was felt, not only over the stomach, but with special intensity in the back. I wrote to him advising that he return and have treatment again for gastric ulcer, but he did not come and I did not see him again until February 21, when I was called to the country to see him in consultation there. I found him at this time deeply jaundiced and learned that he had been more or less so for several weeks previous. Furthermore, during the previous week he had twice vomited blood in considerable amount and during the previous two weeks he had passed from his bowel much black material, tarry in consistence. In addition to his jaundice he was very anemic, weak and could scarcely talk, complaining most, however, of pain in his back. At this time there was a palpable mass found in the right hypochondrium, tender and resistent to palpation; and the stomach was visibly and palpably dilated. He was immediately placed on a cot in a baggage car and brought to Lane Hospital, hoping that a gastroenterostomy might yet save his life; but he died a few hours after his arrival at the hospital, before any operative procedure could be undertaken. With the greatest difficulty I succeeded in getting permission to make a partial autopsy and found as I had expected an old, dense, fibrous ulcer, situated on the lesser curvature near the pylorus, very indurated and thickened, the size of a silver dollar. Behind the ulcer there was a dense mass of adhesions involving the common duct, while the gall bladder was contracted and atrophic and much thickened; and the pancreas converted into a hard fibrous mass, evidently by chronic pancreatitis.

CHRONIC GASTRIC ULCER; GASTROENTEROSTOMY AND RECOVERY.

CASE 5.—*History.*—Mrs. P. B., aged 30, first came under my care in January, 1905. At that time she told me that at intervals for ten years previous she had had trouble with her stomach, consisting principally of burning pain. This pain had not been constantly present and during the ten years there had been times when she went for several months without any discomfort at all; then the trouble would recur and last for six months or more. During the attacks of pain she frequently vomited a very sour material that irritated her throat, but never had vomited blood. There was much flatulence, continued belching and obstinate constipation. At the time I saw her in January 1905, she said she had suffered continually since the previous June with the symptoms just described, especially at night, when she could not sleep until she had emptied the stomach by vomiting. There had been no loss in weight.

Examination.—On examination of her abdomen a tender spot was found in the epigastrium in the median line, but no similar spot of tenderness was found elsewhere over the stomach. There was a loud succussion splash three hours after food was taken and the patient said that she frequently noticed this noise in the abdomen. No tumor was palpable. On manipulation of the abdomen a definite wave of peristalsis was elicited from the stomach, running from left to right. On inflation with carbonic acid gas the stomach was found to be greatly dilated, the greater curvature extending 9 cm. below the navel and as the abdominal wall was thin, the entire contour of the stomach was easily visible after inflation. It was absolutely impossible to introduce the stomach tube in this case because the patient simply would not permit it to be done. No analysis of gastric contents could therefore be obtained.

Subsequent History.—I did not see her again until March 11, 1907. She then returned to me with the same symptoms as before, which she said had been present off and on ever since the previous examination, worse at times, but never entirely gone. Briefly, her story at this time was of a rattling in her stomach, especially when it was touched or moved; of much pain above the navel; of vomiting, which relieved the pain and which she often induced herself for relief; of constant belching of gas; of a burning feeling in the stomach; and of very bad nights, when the pain seemed worse than by day.

Second Examination.—At this time a tumor was found corresponding in size and shape to a dilated stomach, with the greater curvature situated a handbreadth below the level of the navel. Across this tumor from left to right ran a vigorous peristaltic wave, and over the tumor there was a loud succussion splash. A tender spot was found just to the right of the median line about midway between the navel and the ensiform cartilage; and there was marked tenderness also in the back over the lower dorsal vertebræ where the patient said she had intense pain at times. There was no mass palpable

at the pylorus but the tenderness in that region was too great to permit deep pressure to be made. No gastric analysis could be obtained because the stomach tube could not be passed.

On March 12, she was seen again at Lane Hospital. She said she had not slept at all the night before because of pain and at the time of my visit she was writhing and crying with pain. The dilated stomach with vigorous peristalsis was still visible and palpable and the peristaltic waves seemed to cause the cramp like pain; indicating that there was obstruction at the pylorus. All food by stomach was withheld and the patient fed by rectum, with morphin, hypodermically, sufficient to relieve her pain.

Operation.—On March 14, after she had gone for forty-eight hours without food by stomach, the contour of the dilated organ was still visible and palpable, the succussion splash persisted and the peristaltic waves could be elicited just as before. She then decided to accept the operation of gastroenterostomy proposed for her relief. On the morning of March 15, previous to the operation, the stomach tube was passed after the patient was under the anesthetic; a feat that I had never been able to accomplish while she was awake. The stomach was washed out with several gallons of sterile water and a large amount of food detritus was removed. At the operation, performed by Dr. Stanley Stillman, an ulcer was found at the pylorus almost completely obstructing its opening. A Finney pyloroplasty was done in this case. In the afternoon of the same day, much to our surprise, she vomited about a pint more of food detritus, consisting of remnants of potato, bread, and corn. There was no complication of any kind following the operation and she made an uninterrupted recovery. On June 4, when I saw her last, she reported that she ate whatever she pleased, had no pain or distress of any kind and had gained ten pounds in weight since her operation was done.

CONCLUSIONS.

My conclusions, not simply from these cases but from the groups they represent, are therefore the following:

1. There is an early stage of gastric ulcer, lasting for weeks or months, during which rigid medical treatment suffices for cure; but the clinical picture of this stage does not correspond to the classical one presented in the text-books, and the diagnosis at this time must be inferred rather than demonstrated positively.

2. In the later stage, commonly described as gastric ulcer, the symptoms are really due to complications rather than to the original disease; (a) to perigastric adhesions, (b) to pyloric stenosis, (c) to gastric dilation and retention, (d) to localized peritonitis, (e) to the opening of a large blood vessel, (f) to perforation of the stomach wall; complications that lie beyond the realm of medical treatment and have crossed the border line into the surgeon's domain.

THE ETIOLOGY OF EPITHELIOMA; A LABORATORY AND CLINICAL STUDY.

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As a basis for the report of a study of the etiology of epithelioma, I shall quote briefly some statistics from a recent monograph by Röpke in which the relation of trauma to tumor formation was studied with care in a large series of cases. A few other references are made to statistics covering points omitted by this author. köpke analyzes the material of the surgical clinic in Jena, comprising 800 cases of carcinoma. In this series there were 74 cancers of the lip, of which 7 were due to single traumas followed by chronic inflammatory processes. Of those due to a frequently repeated trauma 2 cases were from sharp teeth, 5 from a pipestem and 1 from the mouthpiece of a horn.

In the mouth there were 54 cases, 16 of which were on the tongue, and of these 5 were due to trauma. The cheek was involved in 11 cases, 5 of which were traumatic. The jaw was affected in 18 cases, 11 of which were traumatic.

Of the 32 face cases nearly all were preceded by seborrhea senilis or warts of some kind.

In the esophagus there were 26 cases, nearly all of which were found at one of the anatomic constrictions.

The stomach was involved in 79 cases; 68 were found at the pylorus, 7 at the small curvature and 4 at the large. In 24 cases a history of ulcer preceded the epithelioma and in 7 cases an ulcer certainly pre-existed.

Of the 140 cases involving the intestinal tract the small intestine was involved 3 times, the cecum 4 times, the hepatic flexure 5 times, the transverse colon 3 times the splenic flexure 4 times, the sigmoid 15 times and the rectum 105 times.

The gall bladder was involved in 103 cases, in 74 of which gallstones coexisted. In Fütterer's 268 patients with cancer of the gall bladder all but 8 had gallstones.

In the mammary glands all but 2 per cent. occurred in females, in about 12 per cent. of which abscess preceded the epithelioma. This does not take into account those cases in which mastitis without abscess formation had preceded the malignant disease.

Of the extremities, in Volkmann's 223 cases, only 27 cases occurred on normal skin. In 98 cases there was chronic ulceration, 32 occurred about fistulous openings, 11 from congenital warts and 12 from acquired warts.

From this array of facts it may easily be seen what an important rôle traumatism, generally leading to ulceration, plays in the formation of cancer. These occurrences are too frequent to be regarded as coincidences and there is no reason to assume that congenital displacement should occur at these regions more often than at any other. These ulcerations are not necessarily attended by the over-production of fibrous material, but such is usually the case and some change in its tinctorial reaction probably always occurs. Such change is probably a passive process. If active, as Ribbert assumes, the cause of epithelial proliferation would still remain unexplained.

When one has reviewed the various theories of tumor formation he finds that none of them attempt to explain the ultimate cause of aberrant cell proliferation. Ribbert's "tension" theory may perhaps be regarded as an exception to this, though no very convincing evidence has been produced to substantiate his theory. He believes that in some way the tension of a cell becomes so great that the resistance of the surrounding cells is overcome. In what way this restraint is normally exercised he does not attempt to explain. Lewin made experiments in which he attempted to free cells mechanically from such restraint, but all his experiments were failures. Some years ago I tried to gain such freedom from restraint by injecting emulsions of embryonal cells into the tissues of animals. This idea had for its basis, of course, Cohnheim's theory. I assumed that there might be something in the embryonal cells which would restore to adult cells the power of active proliferation. The results were all negative.

After failing to produce any results with the injection of embryonal cells, I took up a purely chemical hypothesis which had for its basis the following reasoning: We know that the epithelial cells stain with one kind of stain, while the connective tissue stains with an entirely different kind. For the sake of simplicity we may

refer to the epithelial tissue as the basic tissue, for it stains with basic stains, and for the same reason we may refer to the connective tissue as the acid tissue. It must be insisted on that this assumption can have no claim to accuracy, but I believe that such a use of the terms is more than symbolical. Assuming then that the two chemically different tissues are kept in check by the juxtaposition of such different chemical reactions, this relation if disturbed should result in the invasion of one tissue by another. With this rough hypothesis I set to work to make experiments. The various stains used about a laboratory were used in rotation. They were dissolved in a great variety of vehicles and used in the most varied way. Eosin was looked to with the greatest hope on purely theoretical grounds. It was assumed that if the acid combining connective tissue could be made to combine with the stain for which it had affinity its restraining influence on the epithelium might be removed. Aqueous solutions were quickly absorbed and the fine particles, for the most part, transported by the lymphatics. Cotton seed or olive oil was found the most suitable vehicle. Alcohol in all its strengths damaged the tissues too much to be of any use. Sudan III was likewise used in the same manner as the eosin and for the same reason. The results from these two substances were, for the most part, the same. When a fine emulsion is injected subcutaneously an interesting series of phenomena develop. A certain number of leucocytes appear. The endothelial cells of the vessels become more prominent and epithelioid cells collect about the foreign body. In the papillary layer, which normally is smooth with all cells extending to the same depth, the cells are first seen to be pointed and later to project into the connective tissue beneath. This occurs as early as the second day. Later these cells project more deeply into the fibrous tissue. The older they become the more nearly they resemble the adult tissue. These cell columns tend to grow toward the oil-eosin masses. This goes on without the formation of any considerable inflammatory reaction. The growth seems to have certain definite limitations. They grow downwards in more or less extended columns and sometimes form whorls of cells resembling pearls. The limitations of such cell proliferation may be formed by the production of substances antagonistic to such growth. The repeated injection of the stain does not succeed in overcoming such limitations. I am not unmindful of the fact that similar processes are produced in many simple inflammatory reactions. It is quite possible, however, that in this very fact the theory about to be propounded receives a distinct support. The hypothesis underlying my theory is that the epithelial cells are held in restraint by a chemical difference between them and the underlying connective tissue, probably the basement membrane or its equivalent, and that in malignancy there is a disarrangement of the balance, usually by a lessening of the "acidity" of the connective tissue. Clinically considered, a number of things may be used to support this hypothesis.

In the first part of this article I called attention to certain locations where epitheliomas are frequently found. These are for the most part regions where trauma is most common. These traumas may be divided in general into two classes: Those in which a superficial lesion is produced, and those in which an inflammatory reaction results without any abrasion of the surface. It is the first class of cases which we find most frequently associated with malignant disease. Beginning at the mouth we find cancers frequently starting from irritation caused by a broken tooth. We may assume that the ulceration so produced allows the alkaline secretion of the mouth to come in contact with the "acid" connective tissue below and in this way lessen its resistance to the basic epithelium above. In the esophagus we find them at the constrictions. P. Wolf has recently called attention to the fact that in narrowing the esophageal orifice in spondylitis deformans cancer forms at the constrictions so produced. Here the alkaline saliva could act. We find in the stomach an apparent contradiction to the theory, but we know that the vast majority of cancers of the stomach occur at or near the pylorus. We may assume that a regurgitation of the alkaline contents of the intestines may act in a similar way as the saliva in the mouth.

Fütterer has noted that cancers developing from ulcers begin usually at the lower or lateral sides—those regions most exposed to prolonged bathing in the regurgitated alkaline fluid.

The rarity of cancer of the small intestine has been remarked by all writers. In the large intestine the frequency is much greater, as already noted. In the rectum the maximum is reached. The increase in trauma in the large bowel is readily understood. That cancer should arise from ulcer is not strange, but why the multitudinous ulcerations in the small intestine are so rarely followed by cancer has not been explained. While the connective tissue is exposed to the alkaline digestive juices and would, therefore, dispose to epithelial proliferation, the digestive ferments hinder the proliferation of the epithelium. As evidence I would offer a former research[1] suggesting the chemical identity of the processes of blood coagulation and wound healing. These studies reveal the fact that substances which prevent the coagulation of blood also prevent the multiplication of cells in wound healing. Among others the digestive ferments hold the most prominent place. The question of acquired immunity of tissue against such action of the digestive ferments no doubt exists as physiologists claim, but to what degree it acts here it is impossible to determine.

In the stomach the regurgitated bile, which is not a digestive ferment, neutralizes the acid gastric juice without inhibiting epithelial proliferation. It is interesting to note that cancer does not occur in ulcers attended by hyperacidity but in old ulcers in which frequently a lessened acidity exists.

In the rectum the digestive juices are absent and ulcers occurring there are exposed to the alkaline rectal contents.

In the mammary glands the alkaline fluid is not far to seek. All but 2 per cent. occur in the female and the vast majority in breasts previously the seat of inflammatory processes. In inflammation of the gland, it need hardly be remarked, cell desquamations occur, making in reality the equivalent of ulcerating processes, exposing in this way the connective tissue to the alkaline secretion of these glands.

In the gall bladder carcinoma is attended in the vast majority of cases by gallstones. We have here the combination of irritation and alkaline secretions.

In the kidney and bladder we meet with a very striking fact. Stones in these regions are not uncommon, but cancer rarely accompanies them. Israel reports 8 cancers of the kidney pelvis, in none of which was there stone, and in 74 cases of stone no tumor occurred. It

1. Trans. Western Surg. Assn., 1904.

is interesting to note that here the traumatized region is bathed in an acid fluid—the urine.

In the cervix of the uterus the common combination of irritation and alkaline secretion occurs. The frequency of laceration preceding cancer has long been recognized.

The surface cancers in the majority of instances go out from some previous irritation. Seborrheic patches form the beginning in many instances. In seborrhea the keratin-forming process is retarded, holding the cells in a youthful state. This makes an overplus of the alkaline, which tend to overcome the acid of the fibrous tissue below. When a defect of the surface exists the alkaline perspiration has a chance to act on the subcutaneous connective tissue. It is probable that macroscopic ulcer is unnecessary, for simple clefts between cells will permit secretions to enter. The close association of seborrhea and carcinoma is made clear when it is remembered that cells change when they approach the epidermal surface from basic staining to acid staining, while in seborrhea this change no longer takes place.

In the skin another series of processes to which Thiersch calls attention can best be studied, and it seems quite probable that this plays an important rôle. I refer to the change in the connective tissue. Connective tissue, for a long time the seat of inflammatory processes, undergoes a definite change. It becomes poorer in cells and the fibers lie more closely together. That they undergo some chemical change in this process is made evident by the fact that they stain less intensely than normal tissue. This holds true of all chronic inflammatory connective tissue. The same processes take place to a certain though less variable extent in old age, but connective tissue of old age does not show the change in tinctural reaction to be noted in inflammatory conditions. The changes incident to old age lessen the acidophilic property of the connective tissue. This alone is not sufficient to liberate the epithelium, as Thiersch thought, but it makes easier the action of the chemical factors above indicated.

CONCLUSIONS.

1. Cancer occurs at that point where irritation and exposure to an alkaline secretion coexist.

2. When a chemical which has the power of combining with the acidophilic elements is injected into a tissue made up of epithelium and connective tissue the epithelium proliferates and invades the connective tissue, simulating the process in beginning epithelioma.

3. The same chemical process which prevents blood from coagulating limits the invasion of one tissue by another. Epithelium everywhere rests on a tissue similar to the membrane elastica of the blood vessel. It is this layer that confines epithelium within the normal limit.

4. The aberrant growth of cells is but the expression of some disturbance in the chemical relationship of the different kinds of cells. The results of experiments, based on the knowledge of tinction chemistry, permits us to state in general terms the nature of such disturbance of chemical balance.

The Stomach Tube.—A. T. Finch, in a paper read before the Virginia State Medical Society, stated that the stomach tube, like all important therapeutic measures, has been abused, and should not be used in all diseases of the stomach. After using it for the past ten years he believes that it will always prove a benefit to suffering humanity when used with care and proper judgment.

THE AMBULATORY TREATMENT OF HIP-JOINT DISEASE.

[With analyses of several forms of apparatus now employed, and conclusions drawn from observations of two hundred cases treated with a brace consisting of a combination of the most effectual features of these appliances.]

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Nature is able to effect a cure in a large number of untreated tuberculous hip joints with a fair amount of motion, but with the deformity of flexion and adduction; therefore it does not seem improbable that a similar result may be obtained without this deformity. In a recent article that justly eminent Austrian surgeon, Lorenz,[1] states that from his observations the best method of treating these cases is to aid this Nature cure by promoting ankylosis through the use of the limb in walking, while it is fixed in a normal position by some appliance. If this is the best result obtainable, it would seem advisable to erase the joint as soon as disease is discovered, which would cause immediate ankylosis, thereby doing away with mechanical treatment altogether or shortening the time of the same very materially.

Evidence leads one to believe that the best results may be obtained in the conservative treatment of tuberculous hip joints by placing the part in a suitable position, fixing it there, protecting it from injury, and preventing the diseased surfaces from too much pressure (fixation, traction and protection); hence any apparatus must not only embody all these requirements, but, in order that it may be practicable for our clinics, it must be furnished at a small cost. When we take into consideration the fact that the parts involved in the treatment consist of two segments of the body, which differ much not only in size but in that a portion of one of them is flexible, and also that these two segments are connected by a joint that in a normal state is freely movable in all directions, it is evident that the problem is not an easy one to solve.

THE VARIOUS METHODS OF TREATMENT.

A brief study of the different ambulatory apparatuses now in use in reference to their efficiency will be of aid in determining the merits of each; and for the purpose of analyzing them we might select one from each of the several leading countries in which orthopedics is presumably developed to the highest state of efficiency, and for convenience designate them as the German, English, Austrian, and American plans of brace treatment.

The German Method.—This consists of applying a plaster-of-Paris dressing from the axillæ downward, including the trunk, thigh, leg and foot (Fig. 1); crutches are not used, neither does the patient wear a high shoe on the opposite foot. It is plain to see that in this form of treatment the only thing accomplished is fixation of the joint so that normal motion in the different directions is prevented. There is very little attempt to stop concussion of the joint surfaces, therefore it is apparent that traction and protection are not considered essential. An examination of patients who have worn this apparatus shows that a large percentage of them have ankylosis with displacement of the head of the femur on the ilium. It would seem that this dislocation and ankylosis is due to the pressure on the joint surfaces during the active stage of the disease, and that about all to be ex-

1. Jour. Amer. Ortho. Assn.

pected from this plan of treatment is a fixed joint held in a favorable position with considerable actual shortening.

The English Method.—The so-called English plan of treatment consists of the application of a splint (Fig. 2) which may be described substantially as follows: A flat piece of iron about one inch in width, one-eighth inch in thickness, and of sufficient length to extend from the lower angle of the scapula to a point midway of the leg. This upright, which bends readily, is shaped to the surfaces of the body over which it passes, and has attached to it a leg, a thigh and a chest band made of the same material. The splint is fastened around the thorax by straps attached to the chest band, and is bound to the leg and thigh by a flannel bandage. The relation of the upright to the body surfaces over which it passes is as follows: Beginning at the lower angle of the scapula on the affected side it extends downward over the lumbar region, crossing the pelvis near the posterior spinous processes of the ilium, thence along the course of the sciatic nerve to the above-mentioned point a little external to the calf of the leg.

A study of the efficiency of this brace shows that there is fixation as far as flexion is concerned, but that adduction may take place. There is no traction, and protection is provided only by building up the opposite boot together with the use of crutches, which might be effective in adults, but does not prevent children from resting the body weight frequently on the diseased joint. In some instances the upright is extended to a point below the sole of the boot so that the patient will not bear his weight on the foot, but in this case the joint receives scarcely any more protection, as the concussion when the brace strikes the ground is transmitted through it to the hip.

The Austrian Treatment.—The routine treatment of cases in Vienna consists of the application of a plaster-of-Paris spica (Fig. 3), which grasps the pelvis and envelops the thigh. The patient is allowed to walk without crutches in most instances. If the symptoms become acute the spica is supplemented by a brace which extends below the foot and removes most of the body weight from the diseased parts in walking. In Lorenz's recent article[1] he states that weight bearing is not detrimental to the best results, as it promotes ankylosis, which is to be sought. There can be no doubt in the minds of observers who have examined patients in whom recovery from hip-joint disease has taken place under this treatment that ankylosis with frequent dislocation is a common occurrence. It is needless to add that the only principle carried into effect is fixation, that no attempt is made to obtain traction, and that only in exceptional cases is partial protection furnished.

The American Method.—The American plan of treatment is the use of the traction splint (Fig. 4) or one of its various modifications. The brace consists of a pelvic band and an upright made of iron. The band conforms to the surface of the pelvis, around which it is fastened by a strap and buckle. To this pelvic girdle are attached four more buckles, two in front and two behind, for the attachment of perineal bands or straps. The upright is riveted to the pelvic band and extends from the top of the great trochanter to a point about three inches below the sole of the boot, where it turns at a right angle and passes beneath the hollow of the foot, thus forming a foot-piece, which prevents the body weight from being borne on the diseased side. Traction straps of adhesive plaster are applied to the thigh and leg, and the lower ends of these are fastened to a windlass in the foot-piece of the splint. Near the middle of the upright is attached a band, which controls the movements of the limb. The perineal straps, which are made of webbing, pass from the buckles on the front of the pelvic band around the perineum to those placed on the back. A high shoe is worn on the well side and the patient is allowed to walk either with or without crutches.

The above described brace is in common use at present, but it has been modified by some surgeons. The perineal straps have been discarded and a padded ring substituted, which encircles the upper part of the thigh on the affected side and is fastened to the upright. In this form of brace the body weight is borne by the ring on which rests the tuberosity of the ischium.

An examination of this brace for the purpose of determining its efficiency shows that protection is excellent, as the foot does not come in contact with the ground when the patient is standing or walking. Traction is also effective as long as crutches are used, as in this case the weight should be borne on the well side. Fixation, however, is not good, and experiments show that in a majority of cases there is motion of 30 or 40 degrees. In examining patients who have worn this splint we find that in an appreciable number flexion with adduction occurs, and that this deformity is very likely to be present unless the patient has been kept under close observation. Abscesses are not infrequent, and these seem to be due in many cases to the improper fixation and consequent destruction from the joint friction.

PRINCIPLES OF MECHANICAL TREATMENT.

Now, if we are to accept without question the principles of the mechanical treatment of hip-joint disease—fixation, traction, and protection—it can readily be seen that any one of the above described apparatuses is not sufficient to carry these principles into effect under all conditions. Yet if we take as a guide an old untreated case which has gone on to recovery with the characteristic deformity of flexion and adduction and, in some instances, dislocation, it would seem possible to construct an apparatus with the use of which good results without deformity might be assured in the majority of cases.

The first matter to be considered is the position of the limb. The tendency from the time that the disease is well established until after cure has taken place is toward adduction and flexion, and this tendency often continues after all apparatus is removed; therefore the logical position for the part would seem to be in a direction opposed to this deformity (abduction and extension). The argument against placing the limb in an extended position is that motion in a large number of cases is limited or lost, and that if either occurs a little flexion makes it more convenient for the patient. Undoubtedly this statement is rational, but ankylosis should seldom take place under efficient treatment, and if it should enough flexion would follow suspension of the apparatus to place the limb in a good position. On the other hand, a large number of cases show limited motion, and in these full extension is usually impossible. The psoas and iliacus are permanently shortened, and it is often very difficult to remedy the deformity, although there is sufficient radius of motion for all practical purposes with the exception of walking, which act must be performed with a limp on a limb which is practically shortened through placing it in an improper po-

sition during treatment. Abduction is certainly the position of choice, for it not only prevents the deformity of adduction, but, should motion be lost in this direction, this position gives a practical lengthening and for that reason is the most favorable, as it compensates to some extent for the actual shortening due to disease.

The next proposition is to hold the parts in this position (fixation), separate the joint surfaces (traction), and prevent the diseased bone from being injured (protection). The holding of the limb in a proper position, or fixation of the joint, can probably be accomplished best by enveloping the lower part of the trunk and thigh in some material which closely conforms to the surfaces of these parts, taking advantage of all bony prominences, so that any change in the position of the appliance is prevented after it is adjusted. The separation of the joint surfaces can be made by traction or pressure applied to the limb against some fixed point or points in the pelvis. It would seem best to apply this force in two directions—longitudinally and laterally. Protection may be given to the diseased joint by extending the lower part of the apparatus to a point beneath the sole of the foot, so that in walking the boot can not come in contact with the ground. If the patient should attempt to use the diseased limb either in walking or standing the body weight should be borne by that part of the splint or brace which passes beneath the tuberosity of the ischium.

Theoretically this would be ample protection, but experiments show that practically it is not sufficient, therefore it should be supplemented by the use of crutches. The patient should be instructed to bear the whole body weight on the well limb, the boot on this foot being raised by a thick sole which corresponds in height to the length of the brace which extends below the foot on the lame side.

Experiments with the above described apparatuses (the so-called German, English, Austrian and American) seem to indicate conclusively, as already stated, that no one form embodies all the essential phases of mechanical treatment. In order, then, to apply more successfully the principles of fixation, traction, and protection, we are obliged either to seek some entirely new form of appliance, or to combine the requisite features of those in common use, so that the product will carry the desired treatment into effect. If we take into consideration the matter of cost, which is indispensable in a clinic for the poor, it seems impossible to construct any form of apparatus along new lines of different material from that already suggested without putting it beyond the reach of most patients.

Turning again to the appliances already analyzed, we find that the plaster-of-Paris spica bandage affords the best fixation, the adhesive plaster straps the best traction, and the iron brace which extends beyond the sole of the boot, together with the high shoe on the opposite foot, and crutches, the best protection. The cost of this combination amounts to about $5.75 for an average-sized child.

APPLICATION OF APPARATUS.

The application of this apparatus with the patient in a favorable position can perhaps be best illustrated by describing briefly the different steps of the procedure. In lieu of the hip rest commonly employed for the support of the patient while applying the spica bandage, the gas-pipe frame with the duck hammock, such as was devised by Brackett and is utilized in putting on jackets in Pott's disease, has been used. The change from the hip rest to the hammock was made for the reason that the hammock gives a more stable and secure support, and that the patient is under far better control. The patient's body and thigh are covered by a close-fitting stockinette cut to an appropriate size and pattern, of sufficient length to be pulled over the spica and sewed so as to form a covering after the plaster has hardened and is trimmed. The anterior superior spinous processes are padded with felt and a thick piece of the same material is placed over the tuberosity of the ischium to prevent chafing. The child is then placed on the hammock face downward (Fig. 5), the position of extension being governed by raising or lowering the hammock according to the requirements of the case. Traction is made in two directions by straps fastened to the frame, one being attached to the ankle and one to the upper part of the thigh (Fig. 6). The limb is placed in the

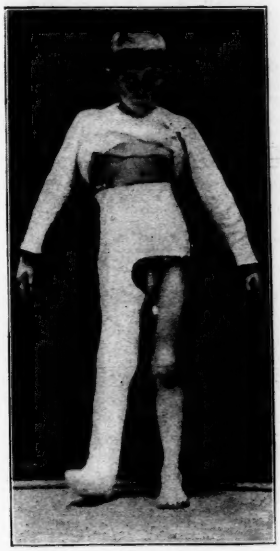

Fig. 1.—German method of treatment.

Fig. 2.—English method of applying splint.

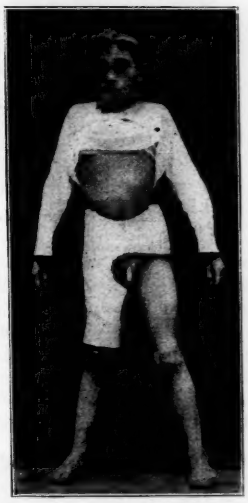

Fig. 3.—Austrian method.

position of 15 degrees of abduction and the hammock is trimmed to correspond to the outline of the patient. The spica is then applied and, after it hardens and is trimmed, the brace part is ready to be attached.

The brace[2] (Fig. 7) consists of a foot-piece to which is secured a windlass for regulating the amount of permanent traction. Welded to the foot-piece are two straps of iron which extend upward on either side of the leg. To the upper part of these iron straps are fastened cross-

Fig. 4.—American traction splint.

pieces of thin flat iron which can be easily molded. This brace, after it has been bent with wrenches so that it will conform to the surface of the plaster, is fastened to the spica at its lower end just above the knee by winding a plaster bandage around it. The adhesive strips which have been applied to the leg are now attached to the windlass, which is about two and one-half inches below the sole of the foot. The stockinette is now pulled

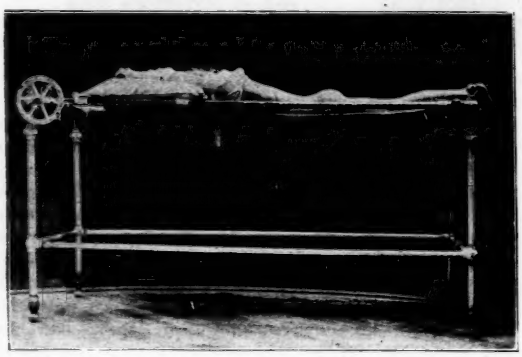

Fig. 5.—Child in hammock showing extension face downward.

over the spica and sewed in place for a cover, and the application of the apparatus is completed (Fig. 8). The high shoe is placed on the opposite foot, and with the selection of suitable crutches the patient is ready to begin the course of ambulatory treatment (Fig. 9). He is instructed to bear all his weight on the well side, and, if the brace is applied so that it does not come within one-half inch of the floor when he stands erect, there is little desire to put it to the ground in walking. The joint is so firmly fixed and protected that any accidental weight bearing on the diseased side will not materially disturb the joint. Careful experiments with this apparatus will show that the fixation, traction and protection are excellent, while the limb is held in a most favorable position.

2. The brace is very similar to the one used in Austria in those cases where the symptoms are marked.

OBJECTIONS.

The objections usually raised to such a method of treatment are three: First that it is uncleanly; second, that such rigorous confinement causes atrophy of all the parts involved; and third, that a certain amount of jar is transmitted to the diseased joint through the use of the well limb in walking.

Granting the first, viz., uncleanliness, which should

Fig 6.—Showing how traction is made in two directions by straps fastened to frame.

not be considerable if the spica is properly applied and due care on the part of the patient is observed, should we hesitate to adopt any form of treatment which is productive of good results in cases of such a serious nature as hip-joint disease? The uncleanliness is most assuredly not so great as occurs in those cases in which suppuration ensues with one or more discharging sinuses, due probably in a large number of instances to the inefficient treatment which the patient has received. The use of plaster spicas is universal in congenital dislocation of the hip, and the patient is obliged to wear them often six or eight months without change, and this, too, in a condition in which there is no actual disease or danger to the patient's life. A comparison of the deformity which follows an unsuccessful treatment of hip-joint disease with that of a case of congenital hip

dislocation would certainly indicate that the former condition demanded the resort to even more radical measures than the latter if the results could be improved thereby.

The second objection, or atrophy following long-continued confinement in such an appliance, will bear investigation. In the first place, how much of the actual shortening is due to disuse and how much to disease? In a case left without treatment it is very evident that the actual shortening is due largely to the disease, for comparisons will show that when treatment has been effective the limb is nearer normal in length than that of a like member in a neglected patient; therefore, while disuse is a factor in the cause of the shortening, it does not seem to be the prime one. The hastened repair of the disease in consequence of the treatment certainly promotes growth and this should more than offset the shortening from disuse. A study of the limbs in congenital dislocations of the hip in which one or both are confined for a long time after operation, does not bear out the theory that long fixation is a considerable factor in diminishing the growth of the part. It must be admitted that there is some use of the limb in these cases, but the fixation is excellent and the atrophy following is very slight.

Some observers[3] of large experience believe that a certain amount of motion is helpful in hip-joint disease, while others are pronounced in their opposite views. In the experience of the authors of this paper it has seemed that the more perfect the fixation the better the results.

Traction undeniably exerts a favorable influence toward increasing the length of the limb. Experiments will show that a weight applied to a well limb will increase its length considerably, so that when it is compared with its fellow quite a difference will be found to exist between the two. The muscular atrophy which follows treatment is not of so much importance, and, if the disease is brought to a successful termination, the development which results from its use is rapid and largely compensates for the diminution due to the confinement.

3. Goldthwaite: Boston Med. and Surg. Jour.

The third objection, which can be demonstrated to some extent by experiments, is not borne out clinically, Careful observations show that patients subjected to this form of treatment respond just as readily as those placed in bed with the joint fixed in any conceivable form of apparatus.

CONDITION OF PATIENTS.

The clinical history of the patients who have been placed under this treatment is very gratifying. About two hundred of them have been kept under close observation and their progress has been carefully noted. Comparisons have been made also with similar cases treated by the usual splint method. Some patients have left during the course of treatment to go to other places, and these have not been considered; others are still under treatment and the final results can not yet be determined; there are, however, a sufficient number for one to draw fairly strong conclusions. No selection of favorable cases has been made, but the patients have been taken as they presented themselves for treatment regardless of their condition, unless signs of an abscess were apparent or the symptoms were so acute that rest in bed for a while was demanded. In every patient the usual symptoms have disappeared in a short time, the general health has improved, and in not one instance has abcess formation taken place in which it could not be clearly demonstrated before the first spica was applied.

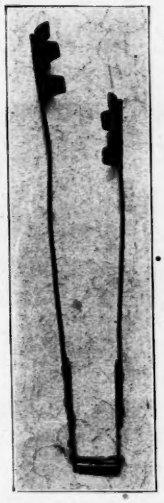

Fig. 7.—Brace consisting of foot-piece, welded to which are two iron straps extending upward on either side of the leg.

Fig. 8.—Showing apparatus in place; spica covered with stockinette which is sewed in place.

Fig. 9.—Showing patient with high shoe on opposite foot and with suitable crutches ready for course of ambulatory treatment.

Brace treatment had already been instituted in some, but the symptoms were so marked, and the condition of the patient showed that the treatment was so inefficient, that some change was necessary. The response to this change was so satisfactory; the general health improved and the symptoms disappeared in a short time.

In analyzing and presenting these cases of hip-joint disease with their treatment there is advanced no claim of originality, but only the claim of a thorough application of well-known principles through combining the most efficient parts of several appliances that are familiar to all.

CONCLUSIONS.

From the observation and study which have been made of these patients through a period of six years it seems that the following deductions are warranted:

1. The case is under excellent control, as the apparatus can not be removed and replaced by the patient or family at will.

2. The appliance can be produced at much less expense than any other that is efficient. These two considerations are of the utmost importance in clinics where the cost must be taken into account, and where the ignorance of the family causes them to meddle with the apparatus through their own ideas of what is best, or from those of near-by friends who are only too ready to contribute their experience and skilful advice.

3. The duration of the treatment may be lessened, which is a factor to be thought of; there is less danger of abscess formation; and the preservation of the joint structure is more certain.

4. Finally, the position of the limb can be regulated to a nicety otherwise obtained only through the use of expensive apparatus accurately adjusted by skilled hands and kept constantly under the closest observation.

THE ROENTGEN RAYS IN ORAL SURGERY.

DESCRIPTION OF A ROENTGEN TUBE FOCUS FINDER AND LOCALIZER.*

G. E. PFAHLER, M.D.
PHILADELPHIA.

The Roentgen rays have demonstrated their usefulness in diagnosis in all branches of medicine, and not the least in oral surgery. Without doubt many, if not all, physicians make use of it in all obscure cases. My object, therefore, is simply to show my methods of application of this agent in the diagnosis of true oral surgical conditions and to describe a little device which has been of great assistance to me in all kinds of Roentgen examinations, but particularly in this field.

A ROENTGEN TUBE FOCUS FINDER AND RAY LOCALIZER.

One of the difficulties encountered since the discovery of the Roentgen rays has been to determine the exact focus point on the anode of the tube. This is especially difficult with a new tube that has not had its focus point burned. The next difficulty, since the diaphragm technic has become practically universal, is to place this focus point exactly in the center of the diaphragm. The third difficulty is to know exactly where the center of the field will be and precisely the direction that the most central ray will take. This is especially difficult when we are making the exposure in an oblique direction, such as is commonly done in the study of the maxillæ. These three difficulties have had to be overcome at each exposure with great care, patience and good judgment. We need, however, a mechanical device which will overcome these difficulties absolutely and thus make our work more exact.

To overcome these three difficulties I have designed a very simple device that does not expose the operator to the rays, that is convenient to operate and that renders results accurate. The device with slight modification is applicable to any diaphragm, but to meet my own needs I have adapted it especially to the Roentgen table. It consists of a piece of sheet iron or lead that will exactly cover the diaphragm opening. To the center of this sheet iron is screwed a piece of brass tubing eight inches long and having one-fourth of an inch bore. This piece of tubing is then arranged to contain a second piece of tubing similar to a telescope.

For use with the Roentgen table the sheet iron is made square, 13.7 cm. (about 5½ inches), which exactly fits into the diaphragm clamp. To the center of this is attached the telescopic tube (Fig. 1). This is then adjusted so that the rays pass through the tube on to a fluorescent screen lying underneath. The focus point will have to be exactly over the center of this tube or no rays will pass through (Fig. 2). Having found the position of the Roentgen tube that will exactly allow the rays to pass through the brass tube and cast a circle on the screen, we know that the focus point is exactly central. The Roentgen tube is then marked by a piece of adhesive plaster so that it can be replaced at any time in exactly the same position.

This focus finder is then removed and the diaphragm replaced. The focus point will be exactly in the center of the diaphragm.

The next service that this little device will render is that of properly placing the Roentgen tube. The brass

Fig. 1.—Roentgen tube focus finder and ray localizer.

tubing when placed in position will always occupy the position and indicate the direction of the most central bundle of rays. By this means this central bundle of rays can always be directed through the most important part of the body under examination, in the direction desired, and on the central part of the plate. All who have used the diaphragm technic have been disappointed to find that at times they did not have the part of the body on the plate that they expected, either because the focus was not central or because the oblique direction was miscalculated.

I have found this simple device of great value and trust that it will be equally valuable to others. It is of especial service in oral surgery, because small sharp fields are desirable and an oblique illumination is often necessary.

My work in connection with stomatology has been more particularly on the bones, or position of the teeth, and the accessory cavities, rather than a detailed study of the structure or the minute condition of the teeth themselves. For this reason I have found plates more useful than the small film which is placed in the mouth. The film is, however, most important, and when it can cover the desired field it will usually give greater de-

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

tail than the plate. The plate gives a larger field for study and comparison of the abnormal with the normal and it gives more of an idea of the relation of the parts.

By careful technic I believe that every portion of either jaw can be clearly shown on the plate. To show the angle of the lower jaw, with the condition of the bone and the three molars and two bicuspids, it is best to place this side on the plate, stretching the neck as far as possible. Then the Roentgen tube should be placed eighteen inches distant and the rays thrown obliquely between the angle of the jaw and the spinal column. This will project the opposite jaw out of the field, and we have only the one jaw clearly on the plate.

Now to show the anterior quarter of the lower jaw which will unite with the section previously described, this portion is placed on the plate; the head is slightly twisted to the opposite shoulder. The rays are passed between the spinal column and the angle of the jaw.

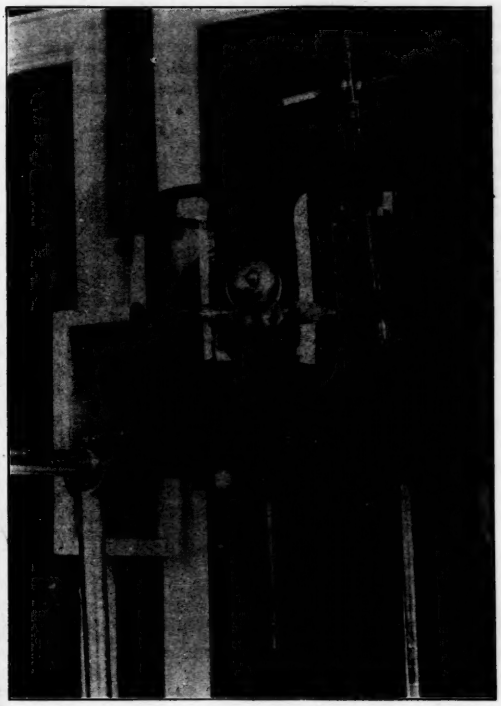

Fig. 2.—Roentgen ray localizer attached to table or diaphragm.

To obtain good definition of the posterior portion of the upper jaw, a position very similar to the one described for the angle of the jaw is used, except that the head is thrown farther forward, and the rays are directed more obliquely upward.

To Roentgenograph the anterior portion of the upper jaw, this portion is placed on the plates and the rays are passed forward just below the mastoid process of the opposite side. This position may also be used to study each antrum separately. Ordinarily, however, to determine the condition of the antrum of Highmore a Roentgenogram is made of both sides at once by passing the rays through the head antero-posteriorly. The face is placed on the plate, resting it on the forehead. The rays are then passed through the median line of the body and just below the level of the mastoid process.

CLINICAL APPLICATION OF THE RAYS.

Ordinarily the rays are used in diagnosing or differentiating malposition of the teeth, unerupted teeth, impacted teeth, dental spurs, retained roots, and exostoses growing from the roots of the teeth and thus making extraction difficult.

Necrosis of the bone, whether this originates about the root of a tooth or is due to some general condition, can be clearly shown. The recognition of the exact lines of fractures and their relation to the adjacent teeth often have an important bearing on the treatment. For instance, one of Dr. Schamberg's patients came with the history and the appearances of an abscess of the jaw with no history of traumatism. Roentgen examination showed a fracture of the jaw, with an abscess at the root of the tooth which was wedged in the fracture. Here a poor result and the later discovery of the fracture might have been embarrassing. When we have the signs of root abscess, it is important to find exactly the source of the infection, so as to save time, tissue and suffering.

The study of the condition of the antrum of Highmore can best be done by this means. If the antrum is found filled with pus we can often determine the source of the infection. Tumors also can be demonstrated in this region, as I illustrated by the case of round-celled sarcoma, which almost filled the antrum and which grew downward from the ethmoid cells.

The diagnosis of malignant disease of the maxillæ is often difficult, and any assistance that can be obtained is a step in advance. Malignant disease usually gives some increase in the size of the bone, and in addition to this there is at first some disturbance of the arrangement of the bone trabeculæ and later actual destruction of the bony substance. The differentiation between an abscess and a rapidly growing neoplasm will not always be easy clinically, but Roentgenologically an abscess will usually show some destruction of the bone early, while this is not likely to be true in a neoplasm.

In conclusion, the Roentgen examination should be used in the diagnosis of every obscure condition. It should also be used to determine exactly the extent of disease even when the general diagnosis is clear. By following this rule much embarrassment and much suffering will be avoided.

DISCUSSION.

DR. G. V. I. BROWN, Milwaukee, Wis., protested against using radiography in diagnosis, to the exclusion of diagnosing by means of the senses. He stated that the practitioner should be able to diagnose a large proportion of all these cases by the use of proper diagnostic methods, and that he ought to develop his skill in that direction.

DR. G. E. PFAHLER, Philadelphia, stated that the radiographs he presented were not intended to supersede diagnoses by means of the senses, but that they were intended as an aid in diagnosis and as confirmatory evidence where doubt existed.

Hospital Floors.—Charles J. Fox, in *Yale Medical Journal*, November, 1907, states that in the construction of the modern hospital too great importance can not be attached to the subject of floors. In spite of the present-day system of thorough ventilation, the isolation of the kitchens, laundries and closets, the immediate removal of all dirt of every character, the frequent use of disinfectants and the sterilizing of all instruments, the hospital can not be sanitary unless it is provided with an aseptic floor. The wooden floor so common in many of our finest hospitals is not only quite out of keeping with the sanitary arrangements of the building, but is a positive danger from the fact that it becomes a harbor for microorganisms and infectious growths of all kinds.

SENSORY DISSOCIATION AS A SYMPTOM.

WITH REPORT OF A CASE OF SYRINGOMYELIA.*

L. HARRISON METTLER, A.M., M.D.
CHICAGO.

The following case of syringomyelia I saw in consultation with Dr. John L. Porter, to whom I am indebted for the privilege of reporting it. The case is presented not on account of anything unusual about it, but as a text merely for the discussion of sensory dissociation.

History.—A. S., aged 30, an unmarried German woman. Her family history was negative, no hereditary neuropathic taint being anywhere discoverable. Her father, mother, sister and brother were vigorous, hard-working people, simple in their tastes and plain in their mode of living. A brother died of typhoid fever, complicated by pneumonia, having been perfectly healthy up to that time.

Until she was 8 years of age the patient was a strong and robust child. Photographs, which I have seen, taken prior to this age, would seem to confirm this. At 8 years of age, however, she was stricken with some severe form of fever, which the family was told was typhoid. She was confined to her bed about four months, a large part of the time being "out of her head." For a while she was highly delirious and screamed incessantly. From this illness, whatever it may have been, she dated her present progressive invalidism. On account of the paralyzed condition of her limbs, she was more or less bedridden the first seven years succeeding her "typhoid" attack. During the first six months she remained at home utterly helpless and requiring to be fed. Then she went to a hospital for three years, remaining in bed the first year absolutely, wheeling about in a chair occasionally the second year and hobbling around a short time each day on crutches the third year. While in bed she still had to be fed and she could only get up and down by means of a rope and pulley hung from the ceiling. During this period she had several obstinate bedsores on the hips and over the sacrum. The scars of these were plainly visible. An apparent, slow but gradual improvement having taken place so that the patient could walk a few steps, this at first being accomplished with a little more facility backward than forward, she at length returned home. Later on it was observed that her left hip joint was becoming fixed or ankylosed and that her right hip had already become somewhat dislocated. Dr. Porter is inclined to attribute these particular joint troubles to typhoid infection, he having a number of cases now under observation with identically the same condition following typhoid fever.

All this time the patient made no special complaint of pain or other sensory disturbance. At about 13 or 14 years of age it was noticed that she was beginning to lose the use of her arms and hands. They seemed to be growing progressively weaker and thinner, and she could not grasp or hold things properly. Medical advice was sought; a tentative opinion of generalized neuritis was hazarded, and electric treatment was administered the next three or four years, with apparently some slight degree of improvement. At 18 years of age all of the symptoms suddenly seemed to take on an exaggerated form. From that time until she entered the Cook County Hospital she had been entirely from under medical observation. Not knowing the nature of her disease, totally ignorant of any sensory manifestations in connection with it, and cognizant only of her deformities and increasing paralyses with muscular wasting, she consulted, on advice, Dr. Porter in the hope of obtaining some benefit from orthopedic treatment. Suspecting the central nature of the trouble, the doctor kindly invited me to see the case with him.

Examination.—My examination promptly revealed the well-known symptomatology of syringomyelia, namely, the amyotrophic lateral sclerosis form of progressive muscular atrophy, the dissociation of tactile from pain and temperature senses with more or less suppression of the latter, and the spinal curvature with other arthropathic manifestations. As the photographs (Fig. 1) of the case, taken by Dr. Porter, reveal the atrophies and deformities better than any description can, I will economize space by detailing only the condition of the reflexes and the sensory phenomena, roughly indicated in the diagrams (Figs. 2 and 3).

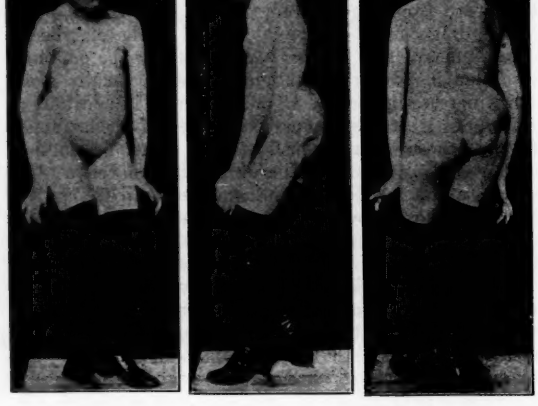

Fig. 1.—Syringomyelia; showing deformity of the spine and atrophy and rigidity of the hands. (Case of Drs. Porter and Mettler.)

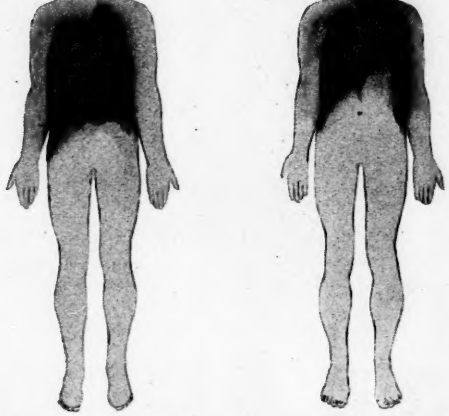

Fig. 2.—Areas of analgesia and hypoalgesia in a case of syringomyelia. In the darkest areas the loss of pain sense was most complete.

The reflexes of the upper extremities were all abolished. In the lower, the ankle and knee jerks were markedly exaggerated. An ankle clonus could be readily elicited. The muscles of the lower limbs were in a condition of moderate spasticity. In regard to the sensation, the tactile was perfect everywhere, the patient being able, with her eyes covered, to tell letters of the alphabet traced with a camel's hair brush on any part of the skin. Indeed, it sometimes seemed as if there were an exalted degree of tactile sensibility, a hyperesthesia, in the parts shown by the darker areas of the diagrams. Pressure and localization sense were everywhere intact. In regard to the diagrams (Figs. 2 and 3), I must state that they were made after a single, though a long and painstaking examination. Every precaution was taken against autosuggestion,

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

and yet so variable at times were the patient's answers—not in essentials but in degree of positiveness—that allowance must be made for some inaccuracy in the intensity and outline of the shadings.

The pain sense was nowhere absolutely abolished. In the darkest areas, however, it approached almost to a complete analgesia. Severe pinching and transfixion of the skin with a needle produced no painful response, though the patient sometimes said she did not exactly like it. The analgesia shaded off into a hypoalgesia in the lighter areas. No sharp line of demarcation could be made out anywhere. Anteriorly, the left side of the thorax and the inner side of the left arm seemed to be the more analgesic. Posteriorly, the thoracic region was almost completely analgesic on both sides, and over a larger area than anteriorly. The outer posterior part of the right arm seemed normally sensitive to pain. Both arms from about midway below the elbow to the tips of the fingers, the whole of the head, a small strip on the top of the right shoulder, and the whole of the lower part of the body below the level of the umbilicus were practically normal in regard to pain sensitivity. The area of pain sense disturbance was uniformly somewhat smaller, both anteriorly and posteriorly, than was that of the temperature sense disturbance.

All over those portions of the body shown by the shaded areas of the figures the temperature sense was more or less lost, though sometimes the patient said "warm" when cold was applied to the skin. In the areas shown by the darkest parts she always frankly stated that she felt only the touch of the hot and cold tubes and was not able to even imagine any temperature differentiation. In the hands, the head, the tip of the right shoulder anteriorly, and the whole of the lower limbs, cold and heat were promptly and accurately distinguished. There were no hysterical stigmata in the case, and mentally the girl seemed bright and well poised.

Sensory dissociation, as a biologic fact, did not provoke any very extraordinary interest until it was recognized as a symptom of syringomyelia. The distinction between the so-called five primary senses was mere commonplace knowledge, and the few observations made by physiology in regard to the pathways of one or more of these primary sensations added but little to our knowledge. Psychology went farther than either anatomy or physiology in analyzing sensation, but without the requisite data from anatomy and physiology it was powerless to offer any satisfactory reason for the variety of sensory phenomena.

Thus matters stood when pathology took up the problem and awakened a general interest in it by somewhat identifying a rare and unusual form of sensory dissociation with a more or less definitely fixed pathologic condition. So frequently appeared together this peculiar break in the complexus of cutaneous sensations and the hollowing of the spinal cord that the former came to be recognized as a pathognomonic sign of the latter. Syringomyelia at once became the great exemplar of sensory dissociation.

In all works on physiology, and even in many on psychology, syringomyelia was pointed to as the final argument for the establishment of the separation of the senses integrally and *ab origine*. Indeed, the very term dissociation, especially when applied to the cutaneous sensations, was always qualified by the adjective "syringomyelia," though the dissociation had often been observed in hysteria and other states in which hollowing of the cord was not even thought of.

The great importance attached to this correlation of the syndrome, loss of pain and temperature sense with preservation of tactile sense, with the hollowing of the cord, has caused, down to the present day, the iteration and reiteration of two gross errors. These are: 1. That syringomyelia can be, all but positively, diagnosed by its peculiar sensory manifestations; 2, that these manifestations are in character at least, if not always in origin, syringomyelic. The former error is kept alive by the positiveness with which the text-books assert that the differentiation of syringomyelia from all other diseases is made by the presence of the phenomena of sensory dissociation, and the latter by the way that we constantly refer to the dissociation as the "syringomyelic syndrome."

Had we not been overwhelmed by the blind and unreasoning enthusiasm of a certain number of prominent pathologists and clinicians, we might have long ago suspected what we are now learning to be true; that is, that this so-called syringomyelic sensory dissociation is, as Grasset first demonstrated, nothing more or less than a localization sign, the expression of a mere anatomic state, such as aphasia or hemianopsia is, and is not in any sense of the word an indication of a disease or of a particular pathologic process. Nay, more, we would have recognized, long before the overenthusiastic identification of the dissociation of pain and temperature sense from tactile sense with hollowing of the cord, that we had been the observers of the syndrome in many

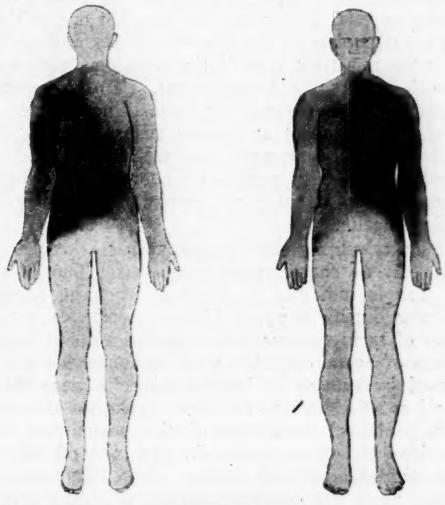

Fig. 3.—Areas of thermoanesthesia in a case of syringomyelia. In the fainter areas cold and heat were both spoken of by the patient as warmth; in the darker areas there was no response as to either heat or cold. The shading is extending a little too far down on the trunk.

cases and forms of disease other than syringomyelia. We would have discovered, on other grounds than mere coarse pathologic observation with its dangerous tendency to the *post hoc, propter hoc* mode of reasoning, that this now called "syringomyelic syndrome" is a functional and not a mere anatomic manifestation. As a functional manifestation it may occur in many conditions, other than mere hollowing of the cord, that disturb the complexus of cutaneous sensation.

This so-called syringomyelic syndrome, on account of the absence of which in two of Joffroy's cases Déjérine contested the diagnosis, though the autopsy revealed the presence of a medullary cavity, saying that "not a single observation of syringomyelia with autopsy had been made in which muscular atrophy was not accompanied by sensory disturbances," has since been seen many times (Lámarcq and others) where there was no hollowing of the cord and *vice versa* (Newton, Strauss, Schlesinger, Charcot, Obersteiner).

To-day it is an established fact that syringomyelia can exist without the dissociation syndrome and the dissociation syndrome can exist without the syringomyelia. As a syndrome the syringomyelic dissociation has been seen in hydromyelia and hematomyelia, in various forms of neuritis, Morvan's disease and anesthetic leprosy, in Pott's disease of the spine, locomotor ataxia, extramedullary tumor of the cord, mixed cases of injury to the cord and nerve roots and cervical pachymeningitis. It has often been observed in hysteria and it has not infrequently been induced by suggestion.

Not only is the syringomyelic sensory dissociation recorded as being wanting in many cases shown at autopsy to be instances of genuine syringomyelia, and not only is it noted in many other non-syringomyelic forms of disease, but even when present in true syringomyelia it seems to lack stability and uniformity. Burr and others have reported cases in which the phenomenon appeared and disappeared in a way that can not be satisfactorily explained on the basis of a definite, uniform, fixed lesion, even though that lesion should exert variable intramedullary pressure by reason of a variable intramedullary gliomatous mass.

As the result of an analysis of thirty-three cases of syringomyelia, Wichmann declares that one of the most striking features of the disease—almost a characteristic—is the remittent type of the symptoms with an occasional remarkable improvement. The experience of Schmitt and Baraban is far from being unique. Their case was diagnosed at various times as tabes, chronic diffuse myelitis, spastic paralysis and lateral amyotrophic sclerosis by various eminent and able diagnosticians, though at autopsy it proved to be a very typical syringomyelia.

Schultz affirms that in many cases there are most assuredly no characteristic symptoms. That this must be true is indicated by Birdsall when he notes that, whereas during the year 1889, for instance, numerous cases of syringomyelia were reported without the verification of an autopsy, the three or four cases that were proved by autopsy to be syringomyelia were not diagnosed as such during life. And, again, the literature in 1890 contained the reports of nine postmortem demonstrations of syringomyelia, in only one of which was this disease diagnosed during life. The same uncertainty as to the symptomatology of syringomyelia is testified to by Obersteiner, Hoffmann, Schlesinger and others.

Roth saw a case of the disease in which there were thermoanesthesia and muscular atrophy, but no disturbances of the pain and tactile senses. Déjérine and Thuilant have put on record a case that exhibited loss of the temperature sense to heat, but not to cold, the pain and tactile senses remaining at the same time perfectly normal. Sometimes the pain sense has been wanting, while the touch and temperature sensations remained intact. To be sure, these are all rare exhibitions, but they are sufficiently numerous, when compared with the whole number of cases of syringomyelia reported and verified by autopsy, to upset one's confidence in the autonomy of the so-called syringomyelic sensory dissociation. Above all, they make untenable all hypotheses which, based on the well-known pathology of syringomyelia, affirm that pain and temperature sensations travel along one side and the same path (Gowers' tract), while touch sensations take a different route.

threw a case out of the category of classical syringo-

At one time the slightest degree of tactile anesthesia

myelia; to-day it is admitted that a considerable proportion of very typical cases (Kretz, Marwedel, Armand and others) manifest some very slight degree of tactile disturbance when they are minutely and thoroughly examined, while not a few cases present areas of complete tactile anesthesia.

A most suggestive summary of the sensory manifestations of syringomyelia is elaborated by Roth, who, in his classical article on the subject, nevertheless lays great stress on them as diagnostic criteria. He says that thermal anesthesia was found in all of his ten cases, and that this is always the most important sensory disturbance. In seven cases of his own group it was accompanied by analgesia. In two of the cases the areas of analgesia and thermoanesthesia coincided; in others they did not. From time to time there was marked variation in the degree of thermoanesthesia. Its distribution did not follow the distribution of individual nerves, but involved certain parts or divisions of a member.

Rarely does one ever observe, he continues, total loss of temperature sense. The same asymmetry and irregularity of distribution, with variability of intensity, characterize the analgesia. One side of the body may be analgesic while the other side is thermoanesthetic. Tactile manifestations, when present, are equally discordant. The muscular sense usually remains intact. Among the other subjective phenomena, it is suggestive to note sensations to heat and cold, formication, pressure, dull pain, despondency and hypochondriasis. All of which led Roth to say, anent the sensory manifestations of syringomyelia, "It may not be so much a question of the tracts involved as degree of impairment." To the writer's mind, it certainly argues against the association of pain and temperature transmission in the same (Gowers') tract at the same time. It opens the way for the hypothesis that pain is not a sense in the same way that touch and temperature are senses; or that there may be under certain conditions the power of functional substitution among all of the tracts; or, finally, that all three sensations, pain, temperature and touch, are but different modes of psychic reaction, under special conditions, to the same general form of extraneural and neural stimulation. At all events little can be learned from the gross pathology of syringomyelia in regard to the nature or transmission of these cutaneous sensations, and it is premature to thus make use of syringomyelia to discuss sensory dissociation in any other way than as a curious and slightly helpful clinical syndrome.

Church and Peterson's text-book, after speaking of the "sensory symptoms" of syringomyelia as "well-nigh characteristic," goes on to say that "sometimes heat is felt as pain or hot as cold;" that "the distribution of the thermoanesthesia is also significant. Rarely it may be hemiplegic; it is seldom general. Ordinarily it involves the limbs, or portions of them, such as would be covered by a glove or sleeve, a sock or long stocking." In parentheses let me recall the psychic interpretation usually put on this distribution of sensory phenomena in hysteria. Newton tabulates the sensory phenomena observed in syringomyelia thus: Thermoanesthesia almost invariably present; analgesia generally present; tactile anesthesia rarely present; loss of muscular sense rare; also loss of localization sense rare.

Gowers lays less stress on the sensory dissociations as symptoms of syringomyelia than most authors do.

Taken altogether, then, it may be said that the so-

called syringomyelic sensory dissociation has lost much of its importance as a distinctive sign of the disease syringomyelia. It is not only variable and unstable in syringomyelia itself, but as a syndrome it is not infrequently observed in many other forms of disease.

Why has this striking form of sensory dissociation thus fallen from its former high appreciation? I think for two prominent reasons, among possibly many others. In the first place, the simple phenomenon, sensory dissociation, was not clearly recognized until it was observed in and studied as a symptom of syringomyelia. In the second place, the teachings of psychology anent the nature and constitution of all sensations, especially the five senses, were not given due weight by physiologists and pathologists until the revelations of syringomyelia showed that at least in one of these five senses, the touch sensation and so-called general sensation of the old physiologists, there was a combination of sensations, as the psychologists had long insisted on.

At last physiology and pathology have demonstrated to their own satisfaction and on their own peculiar type of data the complicated nature of sensation. The complicated nature of all sensations and the possibility of their dissociation, both as common and as uncommon phenomena so long taught by psychology, have at last been acknowledged by physiology and pathology. What was long a mere truism in psychology has finally become even a commonplace in physiology and pathology. As a consequence sensory dissociation has lost its importance as a mere phenomenon, and thus it has lost its importance as a mere symptom of a particular disease. It represents a mere functional or localization disorder.

Just a word to show the commonplace nature of sensory dissociation. The separation of the five senses, touch, sight, hearing, taste and smell, has been so long obvious that it seems almost like an absurdity to refer to it as a form of sensory dissociation. And yet as a matter of fact that is exactly what it is. Phylogeny and ontogeny both demonstrate that these so-called five primary senses are very far from being primary, being, in fact, mere readaptations and evolved elaborations of the primary phenomena of protoplasmic contact.

Mere contact is the one process that lies behind all of these forms of sensation. If the receptors undergo, in the course of evolution, changes to merely adapt them to various modes of external stimulation, that does not modify the axiom that contact is the essential and sole element in the primary constitution of what is called sensation. Psychology and comparative psychology step in here and show us that these so-called five primary senses are more or less dependent on one another for their commonplace expression. Each one of them involves more or less all of the others. In other words, they are in their every-day manifestation nothing but psychic judgments. Analyze and tear them apart and they cease to be the five sensations that we usually refer to. Strip them of their borrowed encrustations, their judgment or intellectual characteristics, and there is left nothing but five modes of contact.

Histology shows that, essentially, the contact process, so far as the nervous elements are concerned, is practically the same for all. This will be shown later in the analysis of sensation. Here I want merely to emphasize the fact that sensory dissociation is seen in so old and commonplace an observation as the separation of sensation into the so-called five primary senses.

Sensory dissociation has been long unwittingly observed in some of these five sensations. Some of these dissociations are almost as permanent and distinct as the dissociation observed between the senses themselves. For instance, form vision and color vision is a sensory dissociation; so likewise is pitch audition as contradistinguished from tone audition. The dissociations in the gustatory and olfactory spheres are less marked, but are none the less present. In the cutaneous sphere there is the distinction between the touch, pain and temperature perceptions.

The similarity of all these phenomena makes it seem strange, now that so little wonderment was shown in the frequent separation of the color from the form vision as compared with the wonderment that has heretofore been aroused by the separation of the pain and temperature senses from the touch sense. The loss of color vision with preservation of form vision is, as a clinical exhibition, not unlike the loss of temperature sense with preservation of tactile sense. In fact, the cutaneous sensory dissociations are not remarkable at all. They fall in line with and are analyzable in the same way that all sensory dissociation is.

I have already noted the cutaneous dissociation in various states of disease. To these I may add those noted by McKeag. Puchelt observed four cases which showed thermoanesthesia, with no impairment of the pain and touch senses. Berger, Mosler, and Landois report similar observations. Thermohyperesthesia occurred in one case wherein the senses of pressure and locality were lost. A case of typhus, according to Fritz, exhibited only analgesia. Gowers had a case that was completely analgesic on one side without loss of the tactile sense. The opposite of this condition has been recorded by Mosler. These look much like hysterical manifestations. In a case of myelitis, Herzen observed a loss to cold and touch stimuli in the lower limbs, with retention of heat and pain sensibility.

Adamkiewicz mentions as an illustration of elective anesthesia the fact that while the sensitivity to touch and pain is increased on the skin area to which a blister has been applied, and is diminished on the opposite side on the corresponding spot, this "sinapismic transfer" does not take place in the case of temperature sensations (McKeag).

To these may be added other modes of the dissociation, noted by McKeag, in which drugs play the etiologic rôle. Donaldson, for instance, found that cocain applied to the conjunctiva destroyed the pain, but not the temperature sense. According to Shore, the tongue of the gymnema revealed preservation of the touch and temperature senses when all other forms of sensibility were lost. Kiesow finds that touch, pain, heat and taste sensations are not equally diminished by the application of cocain to the tongue and mouth. Goldscheider observes that the intensity of the cocain effect differs for different sensations.

The tickle sensation is most affected, next temperature, then taste, and finally pressure, sense of locality and pain. On the tongue a 10 per cent. solution of cocain will cause the sensation of temperature to disappear entirely, while sensations of pain from a mechanical stimulus can still be felt, though much weakened. Contact, though weakened, can still be felt after cold and heat sensations have disappeared. In one experiment, before which the skin was blistered and the epidermis removed, it was found that after the application of cocain, "contact with a cylinder only slightly heated gave a painful sensation without a trace of heat sensation. . . . Mechanical stimulation does not produce this painful sensation." Carbolic acid applied to the tongue in 5 per cent. solution destroys the sense of taste and of temperature, but only weakens pressure and pain. Chloroform and also the drug kava-kava have a similar effect. All of these drugs produce

a hyperalgesia toward heat stimuli, whereas menthol produces a hyperasthesia for cold stimuli (McKeag).

According to Ribot, the sense of touch is destroyed by saponin, while that of pain remains unaffected. Richet notes that in the abnormal states provoked by the use of arsenic and belladonna the temperature sense remains, though the skin is anesthetic in other stimulation.

In the normal state, cutaneous dissociation has been observed. For instance, a case of natural analgesia was put on record by Weir Mitchell. Witmer saw a man for some time who could by mere volition render himself completely insensible to pain from pricking, cutting, burning and electrical stimulation (cited by McKeag). These cases bring up the thought of hypnotic suggestion, as a result of which, as I have said, all forms of sensory dissociation seem to be possible.

Psychologically suggestive is the fact noted by Richet that mere contact, for instance, can not be made hyperesthetic. What is contact in the normal state will be observed in the hyperesthetic state, not as mere contact, but as pain. Hyperesthesia for temperature has never been observed in spinal meningitis, according to Dessoir. Brown-Séquard remarked that hyperesthesia does not increase the accuracy of localization; it rather duplicates and multiplies the number merely of the sensations. And thus we see that cutaneous sensory dissociation is far from being an uncommon manifestation both in health and in disease.

There are to-day three general hypotheses or conceptions of the origin, nature and course of sensation. All are more or less authoritatively well supported. In one particular only do they all completely agree, and that is the necessity of the presence of consciousness.

THE ANATOMIC CONCEPTION.

The first conception—perhaps the most popular because it is the most easily apprehended—rests on the old notion of "specificity of nerve function." For every special form of sensory manifestation there is a special nervous element. Pain always travels along pain nerves or paths; tactile, along tactile nerves or paths; temperature, along thermal nerves or paths. The conducting apparatus, including peripheral end-organ, intervening neurons and central receiving station, is always a pain, touch or temperature apparatus and nothing else.

This is rather a crude conception of the nature of sensation. It is predominantly the anatomic conception. It assumes plainly that the impulse which starts at the periphery is *the* sensation and that as such it continues unchanged until it has arrived at the cortical areas, where, in the sphere of consciousness, it is recognized in all of its original specificity.

This anatomic conception forms the background of the three subsidiary hypotheses, involving, respectively: 1, The existence of specific skin areas (Blix, Goldscheider, von Frey and others); 2, specific peripheral nerves and central tracts (Head, Gowers, Bechterew and others); 3, specific central ganglia and cortical areas (the Ferrier school of cerebral localizationists).

The holders of this objective, anatomic conception of sensory manifestation have only to determine the anatomic base of each specific sensation and their task is practically ended. By means of pathologic observation and laboratory experimentation they endeavor to correlate sensory revelations with particular histopathologic changes and thus deduce the basic anatomic *raison d'être* of the specific sensation in question.

This conception does not attempt to explain why, for instance, pain sensation is different from touch sensation; why cold is not the same as heat. It leaves that for others to theorize about. It simply affirms that the nervous apparatus which transmits pain impulses, for example, is separate and distinct and *sui generis* from the apparatus which transmits touch impulses. With or without the assumption that the distinction may depend on the differences in the extraneural stimuli at one end or on the mere psychic judgments at the other end, it postulates practically that the specificity of the sensation itself is sufficiently accounted for by the assumption of specificity in the respective neural elements.

THE PSYCHOLOGIC CONCEPTION.

The second conception of the origin, nature and development of sensation is one almost wholly psychologic and philosophic. It insists that sensation itself, and, above all, every form of sensory differentiation, is a pure content of mind, strictly a psychosis. No mind, no sensation, would be the bald statement of its guiding formula. It argues that impulses, nervous irritability, neuronic excitability or whatever we choose to call it, are terms to be used merely in stating what we unknowingly assume takes place in the physiologic processes lying behind what is denominated in consciousness as sensation. Touch, for instance, is a psychic term; the physiologic correlate is probably a mere chemical or molecular disturbance.

This conception of sensation presupposes a full and complete definition and knowledge of mind. In such a definition, the term sensation would stand for one of the products or integral constituents of mind activity. Whatever the mind is constructed out of, among the innumerable physiologic functions, processes and anatomic elements of the animal organism that may be involved, sensation, as we understand the term, is not one of the elementary materials of construction.

It is, rather, one of the end-products or even intermediate products in the constructive process. Just as it is the mind only that sees and hears—that is, gives interpretation to the particular forms of irritability which the auditory and visual paths, like all other paths, happen to transmit to it—so it is the mind only that feels and experiences pain and temperature manifestations.

This psychologic conception of sensation leaves to physiology the determination of the physical basis of mind and only insists on the dictum that sensation is a manifestation of a psychosis, a change of consciousness, a psychic product or process, made up, it may be, of many elementary but quite different, though interrelated, physiologic products and processes.

THE ECLECTIC CONCEPTION.

The third conception of the origin, nature and development of sensation is somewhat eclectic. It attempts to harmonize the two preceding, somewhat opposing views. It represents the latest scientific thought along this line. It acknowledges that sensation is a psychic content, even a psychic product, but it also maintains that it is the result of a definite, definable physiologic process in a sort of specific neural apparatus.

It teaches that by means of intercalated neurons, ganglia and relay stations of gray matter an impulse that starts at the periphery as a mere chemical or molecular disturbance is so added to, modified and elaborated in its progress upward toward the centers of consciousness in the brain that, by the time it has arrived at those centers, and not before, it has become all that

we mean by the specific term sensation. Sensation is thus a direct product of histophysiologic activity, but it is a physiologic elaboration or summation. It does not exist at the periphery; it is only complete at the center.

I have elsewhere treated in detail these three conceptions of sensation and given the arguments and data *pro* and *con* in regard to them. I will, therefore, merely repeat here the conclusions of my paper.

From the very nature of sensation, dissociation phenomena should not be looked for in mere coarse anatomic differentiation. Sensation, its dissociations and its differentiations with all of their variations is, in its ultimate analysis, a psychophysiologic phenomenon. Its interpretation, therefore, involves, essentially and integrally, the interpretation and explanation of mind.

As psychophysiology postulates that sensations are due to physical stimuli, on the one hand, and to complicated functional processes, on the other, their differentiation and dissociation must likewise be due to differences in the stimuli or in the functional processes. In terms of pathophysiology this would mean that clinical dissociations are to be attributed either to differences in the deleterious, etiologic agents and malign influences at work or to differences in the resistive capacities of the constituent elements of the systematic apparatuses that subserve the manifestation of the specific sensations. In other words, clinical dissociation of sensation is not a matter of mere anatomic structure, but of disturbed functional activity.

Sensory dissociation is not a very valuable symptom *per se*, because in the first place it is as common a phenomenon in the normal as it is in the abnormal state, and in the second place it is dependent not on direct, observable, fixed, histopathologic changes, but on indirect, all but unknown and unexplainable differentiations in the extraneural stimuli and in the processes underlying pure psychosis.

DISCUSSION.

DR. CHARLES K. MILLS, Philadelphia, did not think that some of the points in Dr. Mettler's paper were well taken. Every neurologist of any considerable experience knows full well, both from living cases and cases with necropsy, that there may be dissociation of sensation in a variety of diseases, such as syringomyelia, peripheral disease, tabes, hemorrhagic myelitis, disease of the parietal lobe, hysteria, etc., but, he said, it is a wrong standpoint to take that this dissociation of sensation is of little or no value to the neurologist. It is not dissociation of sensation which points to syringomyelia, but it is dissociation of sensation with other clinical manifestations. Dr. Mills felt that Dr. Mettler was substituting uncertainty for relative certainty. He has not overturned any of the fundamental positions taken by localizationists.

DR. L. HARRISON METTLER, Chicago, agreed with Dr. Mills that he was substituting an uncertaianty for a certainty. He would rather, however, recognize an uncertainty and go slow than believe in a certainty, which, according to psychologic demonstration, according to the diagnostic findings recorded in literature and according to the latest physiologic observations, is shown not to be such. That is the position which he feels must be taken to-day in regard to the question of sensory dissociation. He wished that he could subscribe to the fact that, in these reactions of the nervous system, certain phenomena of sensation do always make their appearance the same way under the same conditions. The object of his paper, he said, was not to arouse opposition to well-established facts in diagnosis, prognosis and therapeutics, but to show that in our present state of knowledge in regard to the sensory reaction we must not be too hasty or dogmatic. Dr. Mettler took exception to the assertion that sensory dissociation, as a cardinal symptom, determines whether a given case is one of syringomyelia or not. He has seen instances where a diagnosis of this sort was made on the presence of sensory dissociation. Dr. Mettler mentioned instances in his paper of just such errors into which we are liable to fall by resting the diagnosis on the belief that our knowledge is certain.

THE MAJOR OPERATIVE TREATMENT OF MIDDLE-EAR SUPPURATION AND ITS INDICATIONS.*

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The indications for major operative treatment for middle-ear suppuration, together with the operative procedures necessary in the various conditions, must naturally be divided into two distinct classes: 1, the indications and operative procedures in acute cases; and, 2, the indications for operation and the proper operative procedure in chronic cases.

While in acute middle-ear suppuration the indications for operative interference are usually sufficiently clear, it is sometimes difficult to decide whether an operation is absolutely imperative in a certain case, or whether, even in the presence of apparently positive indications for operation, the condition may not resolve.

The two most prominent indications for operative interference on the mastoid in acute middle-ear suppuration are, first, the presence of local tenderness over the mastoid, and second, the sinking of the upper and posterior wall of the external auditory meatus close to the drum membrane. Regarding local tenderness, the persistence of this sign in spite of the fact that drainage from the external auditory canal is free, or the exaggeration of this sign, when drainage from the canal is apparently obstructed, is one of the principal indications for operative interference. The mastoid may be tender either over its entire surface or only over certain areas. It has been my experience that in almost every case of acute otitis media, tip tenderness may be elicited within the first twenty-four hours of the attack, even although free incision of the drum membrane is performed early.

Tip tenderness alone, therefore, in the early stages of an acute inflammation, while it is a sign which should always be borne in mind, is not an indication for operation. Tenderness over the mastoid antrum should, theoretically, appear earlier than tip tenderness, owing to the fact that the mastoid antrum is really a part of the tympanic cavity. As a matter of fact, however, in acute cases antrum tenderness usually appears after the tenderness at the tip. Tenderness beginning over the antrum and spreading toward the tip is a very significant symptom. The importance of local tenderness as an indication for operation depends on the period in which it appears. The tenderness, although very pronounced, coming on at the time of a middle-ear inflammation and persisting in spite of free drainage for forty-eight hours or more, is not necessarily an indication for immediate operation, provided the drainage from the middle ear has been freely established by means of a free incision of the membrana tympani. The same amount of tenderness occurring on the fifth or sixth day of an acute middle-ear inflammation, would render immediate operation imperative. We may say, therefore, in regard to local tenderness that if the middle ear is draining freely through a large incision in the membrana tympani, if

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

the patient is not suffering pain, and if the temperature is but slightly elevated, that the local tenderness may be disregarded for, at least, two days from the beginning of the acute attack. If the temperature is elevated, if the patient is suffering severe pain, or if the discharge instead of being free is only scanty, local tenderness points strongly to the necessity of an immediate operation at the end of thirty-six hours from the beginning of the attack.

Another important symptom is the appearance of the fundus of the canal. A sinking of the upper and posterior walls of the external auditory meatus, close to the drum membrane, or an actual shortening of the meatus, indicative of distension within the tympanic cavity, or, in rare instances, a slight elevation of the posteroinferior wall of the meatus, all point to inflammatory products within the mastoid, which require evacuation by operative interference. These otoscopic appearances, together with local tenderness, constitute the two most important indications for operative interference. The later the case is observed after the beginning of the acute attack the more imperative is immediate operative interference, the indication being that drainage through the membrana tympani is insufficient.

A study of the temperature in these cases, particularly in adults, is exceedingly misleading. While a temperature elevation would be indicative of the necessity of operative interference on the mastoid, the fact that the temperature is not elevated would, by no means, indicate that operative measures should not be instituted. This is particularly true in the case of adults. In a large number of cases of extensive destruction of the mastoid, following an acute suppurative process, I have found absolutely no elevation of temperature. This afebrile condition is seldom observed in infants. Mastoid involvement in infants is ordinarily accompanied by a moderate amount of temperature elevation and sometimes by a considerable elevation.

The value of the blood count in determining the necessity of operation has not proved itself of much value in my hands. In only a few of the doubtful cases has the increase in the number of polymorphonuclear cells proved a safe guide. In the great majority of doubtful cases the differential blood count has been of but little value. While, therefore, a differential blood count should always be made, negative evidence in this direction should not deter the surgeon from interfering if other signs are present. On the other hand, in the absence of other signs, a positive blood count, that is, an increase in the number of polymorphonuclear cells, should only be taken as an indication for operation, if suppurative lesions in other parts of the body can be excluded. I remember a doubtful case seen in consultation this winter, in which the differential blood count showed 85 per cent. of polymorphonuclear cells. The attending physician assured me that there was no other suppurative condition present. Questioning the patient revealed the fact that he was suffering from a chronic prostatitis. This patient recovered absolutely without any operation on his mastoid. Had we relied on the blood count alone he would have been subjected to an unnecessary operation.

With reference to the discharge from the ear, a sudden cessation of the discharge, together with the appearance of local tenderness and physical signs in the canal, should always constitute an indication for immediate operation. In cases where the discharge has persisted for two or three weeks, a very profuse discharge from the meatus may also be considered as an indication for operative interference. In other words, an acute suppurative otitis, with free drainage by incision of the drum membrane, should clear up in from one to two weeks. If a very profuse discharge continues beyond this time we are almost certain, even in the absence of other symptoms, that there is involvement of the mastoid cells, and that the patient's interest will be best conserved by establishing drainage through the mastoid.

The bacteriologic examination of the discharge is also of importance. While all infections may occasionally cause excessive destruction within the mastoid, we find that the streptococcus infections, the infection of the Friedlander bacillus or the encapsulated streptococcus, usually cause the most extensive destruction within the mastoid, and in the presence of these organisms it is wise to operate earlier than we would do if the infection were either a mixed infection or a staphylococcus infection.

Regarding the advisability of early operation, I believe that the best interests of the patient are conserved by early posterior drainage. I am speaking now not only as far as the life of the patient is concerned, but also regarding the integrity of the organ of hearing. An early mastoid operation subjects the patient to practically no risk if the operation is skilfully performed, while, if the surgeon is in doubt, he is certainly giving the patient the benefit of the doubt as far as the danger to life is concerned, by operating early.

Regarding the function of the ear, we all know how seldom the hearing is seriously impaired after an early mastoid operation, while in cases of suppurative otitis, which are allowed to continue for a considerable period of time—even though the suppuration may ultimately cease—the hearing is very frequently impaired. This is another reason why we should urge early operation in all doubtful cases.

I will go into the technic of the mastoid operation but briefly. The first step after the exposure of the mastoid by an appropriate curvilinear incision supplemented, if necessary, by a posterior incision at right angles to the center of this, should be the removal of the mastoid cortex. This is best done by a large gouge. The mastoid cortex being removed, there are three regions which the surgeon must thoroughly explore: First, the mastoid antrum, which must be cleared of all inflammatory products so as to afford free drainage from the middle ear through the posterior opening. Second, the cells at the mastoid tip must be completely removed, as it is here in acute cases that we frequently find foci of infection, even though the antrum may contain no pus. Third, a careful investigation of the cells at the root of the zygoma, as in this region infection is common, particularly in children. All of the pneumatic spaces of the mastoid should be freely broken down by means of the curette, but the antrum, the tip cells and the zygomatic cells should receive special attention.

I will not speak of accidental injury to the lateral sinus or injury to the facial nerve. The sinus is frequently exposed during the conduct of the operation for acute mastoiditis, but the mere exposure of the sinus constitutes no menace to life. An accidental wounding of the sinus, while it opens the possibility of septic infection through this large venous channel, is seldom a fatal accident. The hemorrhage is easily controlled, and if the operation is conducted properly infection seldom occurs.

Injury to the facial nerve is exceedingly rare in the operation for acute mastoiditis. I think I have seen it occur once or twice in over five hundred operations.

After the operation is completed, one of three methods of treatment may be followed as regards the dressing of the wound: First, the wound may be simply packed with gauze and treated as an open wound, allowing it to heal from the bottom; second, the wound may be completely sutured, having been previously allowed to fill with blood in the hope of obtaining primary union and organization of the blood clot; third, the wound may be sutured throughout the greater portion of its extent and a narrow gauze drain inserted into the cavity so as to obtain healing of the major portion of the wound, by first intention, and the probable organization of a large portion of the contained clot. Of these three methods I believe that complete suture, with organization of the blood clot, is applicable to only a very small proportion of cases. In forty mastoid operations performed during the last year complete or partial suture was employed in a considerable number. In every case of complete suture, with one exception, the wound broke down and healing, in every instance, was effected by packing. A certain proportion of the cases of partial suture were successful, and this method is applicable to certain cases where the disease is not very far advanced. In the large majority of cases, however, I believe that the open method is the one which yields the best results and which is least liable to be followed by recurrence.

There is a class of cases which should be spoken of here, in which, after an apparently successful mastoid operation, the wound either fails to heal or, after perfect healing has taken place, the wound subsequently breaks down, a subperiosteal abscess appearing beneath the old cicatrix. In almost every case of this kind, where recurrence has taken place, I have found that the radical operation was the only procedure which effected a cure. This is invariably true of cases where, in addition to recurrence of the mastoiditis, we have a discharge from the external auditory canal. In a few cases a recurrent mastoiditis may be due to imperfect removal of the cells either at the tip of the mastoid or at the root of the zygoma. Almost always, however, these recurrent cases are due to caries in the tympanic vault, a condition which can only be relieved by the radical operation.

When we come to consider the cases of chronic middle-ear suppuration, and the operative procedures indicated for their relief, I believe that every case of chronic middle-ear suppuration should be subjected to the radical operation. This applies not only to cases suffering from a persistent purulent discharge, but also to those cases where there is a history of intermittent discharge, or to instances where there is only a slight discharge from the canal. In the class of cases last alluded to, the discharge may never be profuse, but may be so slight as to simply form a crust on the upper and posterior wall of the canal, and on the removal of this crust a small quantity of pus may be seen coming from the tympanic vault. It has been my experience that cases of this character and cases of intermittent discharge are frequently more in need of operative interference than are those cases where the discharge is very profuse. In a large number of instances I have operated on patients where the discharge has never been profuse, and have found very extensive destruction within the tympanic cavity.

The otoscopic appearances demanding radical operation vary considerably. I think we may lay it down as a definite rule that, in every case where we have a sinus leading into the tympanic vault, and where a discharge is present, these cases should be operated on, even although the perforation is small. Cases where granulation tissue is present will ordinarily demand operation. In every instance where a perforation exists above the short process of the malleus, that is, in Shrapnell's membrane, operative interference is absolutely indicated. A few cases of chronic suppuration, with a small perforation in the lower portion of the membrana tympani, may recover by free incision of the drum membrane thus draining the tympanic cavity freely, and in a few other cases where the drum membrane has been extensively destroyed, dermatization of the tympanum may take place in spite of the destruction of the drum membrane, and the ear may never discharge. These cases do not need operation. In all other instances, however, I believe that the radical operation is indicated.

The ordinary technic of the radical operation is so familiar that it is not necessary for me to enter on it here. The only point which I wish to emphasize is that, in performing this operation, every diseased cell must be entered and thrown into the radical cavity. In order to accomplish this end, the incision through the soft parts should lie further behind the line of auricular attachment than is necessary in performing the operation for acute mastoiditis. This allows the anterior flap to cover the radical cavity completely when the flap is returned to its position and avoids any external deformity.

In the radical operation the incision should begin at a point just below the tip of the mastoid and should extend upward and backward to the point of superior auricular attachment, being located at least half an inch behind the line of posterior auricular attachment. When the anterior flap is elevated, almost the entire mastoid cortex will be exposed without any very extensive elevation of the posterior flap.

The first step in the radical operation is to enter the mastoid antrum. This is best done by removing the bone by means of a large gouge, so as to enlarge the external auditory canal, the outer portion of the posterior wall of the external meatus being broken down at the same time that the mastoid cortex is removed. The antrum should be opened in the usual situation, that is, in the suprameatal triangle. As soon as this is accomplished, the operator is able to map out with the probe the size of the antrum and to modify his technic somewhat according to the conditions found. If the antrum is large and extends for a considerable distance backward, the cortex of the mastoid should be removed backward to near the posterior limits of the antrum. This gives a large field of operation and renders the subsequent steps of the procedure more simple. This having been done, it is necessary to break down the bridge of bone covering the aditus ad antrum, so as to expose the prominence of the horizontal semi-circular canal. This bony prominence is an important landmark and should be sought for as soon as the bridge of bone separating the external auditory meatus from the mastoid wound has been broken down.

The next step is the removal of the external wall of the tympanic vault. This is best done either with the gouge or with the curette. It is exceedingly important that the horizontal semi-circular canal should be recognized early, as its position varies considerably in different cases, that is, in some cases the antrum and tympanic vault lie very high, while in other cases they are placed at a lower level. In the one instance, if the operator removes the bone too low down, he is almost certain to injure the facial nerve. In the other instance, if he tries to avoid the facial nerve and remove the bone

high up, he is almost certain to enter the middle cranial fossa. The only safe plan, then, is to remove the bone cautiously until the prominence of the horizontal semicircular canal can be seen, and as soon as this is recognized to remove the remainder of the outer wall of the vault and also any overhanging edges of the outer wall of the antrum. The ossicles should next be removed either with the curette or forceps. Any granulation tissue lying in the tympanic cavity should be curetted out. Hemorrhage is sometimes annoying, as it obscures the field of operation, but this may be controlled by packing the cavity with strips of sterile gauze, saturated in a 1/1000 solution of adrenalin chlorid, and allowing the packing to remain in place for a few minutes. It is exceedingly important to have the field of operation as free from hemorrhage as possible in order to avoid the accidental injury of important structures, such as the facial nerve, or the accidental dislocation of the stapes.

After the radical cavity has been roughly formed in this manner, there are three points the operator must carry out: First, the obliteration of the posterior tympanic space by the cautious removal of the posterior wall of the external auditory meatus; second, the obliteration of the hypotympanic space by the removal of the inner extremity of the inferior wall of the canal, and, third, the thorough curettage of the tympanic orifice of the Eustachian tube, in order to secure the obliteration of the tube at its tympanic orifice, and the complete separation of the radical cavity from the vault of the pharynx. The posterior wall of the external auditory meatus may be removed as low down as the plane of the inferior wall of the bony meatus for a distance of two-thirds of its extent from without inward. Its removal for the inner third of its extent must be cautiously performed, a ridge being left which slopes upward to join the ridge of the horizontal semi-circular canal. In this way the descending portion of the facial nerve is avoided, excepting in very rare cases where the facial nerve runs obliquely through the mastoid. If the posterior wall is removed cautiously by means of the gouge and curette, the bony spur being first sloped from the floor of the external orifice of the meatus upward to the plane of the horizontal semi-circular canal, and the outer portion of this sloping bony wall is gradually cut away with the gouge or curette, keeping the field of operation perfectly clear, the facial nerve may be avoided, in this position, in every instance. In the obliteration of the posterior tympanic space, I have found the gouge cautiously used, supplementing its use with the curette, to be the best method of obliterating the space and, at the same time, preserving the integrity of the facial nerve. The hypotympanic space is best obliterated by means of the curette, the instrument being used to cut down the inferior wall of the meatus at its inner extremity, until the space is obliterated. In curetting the mouth of the Eustachian tube, it must be remembered that the curette should only be employed upward and forward. The use of any cutting instrument in the tympanic orifice of the Eustachian tube in a backward and downward direction imperils the internal carotid artery.

Regarding injuries to the facial nerve, although the nerve may be injured in its downward course, the technic advised will usually avoid such an accident. Most frequently the facial nerve is injured in its horizontal portion as it crosses the tympanic cavity from behind forward, lying in the aqueductus Fallopii. This portion of the tympanic cavity should be subjected to very cautious curettage in the removal of granulations. The curette should never be forcibly used in this region. Exposure of the dura in the middle cranial fossa is frequent in these operations. It constitutes no menace to life, and a number of operators remove the roof of the tympanum and mastoid antrum in every instance, in order to be absolutely certain that no carious bone remains in this region. My own practice is to remove the roof of the tympanum and mastoid if they are carious; otherwise to leave them in position. The same may be said about the bony covering of the lateral sinus. It may be necessary to expose the lateral sinus during the radical operation. It certainly is necessary if the outer wall of the groove shows any disease. If we can avoid exposing the sinus, however, so much the better.

In a large proportion of cases of chronic suppurative otitis which come under observation, it is not necessary to remove the mastoid tip. In most cases of chronic suppuration, the mastoid is sclerotic and the cells at the tip are completely obliterated. In other cases, the tip cells, although present, are perfectly healthy. My own rule is to follow the mastoid structure carefully until every trace of diseased bone has been removed. If the cells leading toward the tip appear healthy, I do not consider it necessary to obliterate them. In two cases recently seen, all of the cells at the tip were filled with cholesterin. In these cases it was necessary to remove the tip cells. Of course, if the tip cells contain pus, they should, in every instance, be obliterated.

Having completed the radical cavity, certain measures are necessary to secure its rapid dermatization. Foremost of these is the enlargement of the meatus by a plastic operation. Several varieties of plastic operation are advised. In one the meatus is split longitudinally along its posterior aspect, the incision being carried well out into the concha. From the conchal extremity of this incision, two incisions are made at right angles, one upward and the other downward, so as to form two quadrilateral flaps. The cartilage is removed from these flaps, and the upper one is stitched upward on itself, the other one downward on itself, in this way widening the meatus and forming a partial dermic lining for the radical cavity. In another form of the plastic flap, that is, the one known as the "Körner" flap, one incision is made from the inner extremity of the meatus outward into the concha along the postero-superior wall of the meatus. Another incision, of similar length, is made along the postero-inferior wall. The cartilage underlying the tegumentary covering of this flap is removed, and this large quadrilateral flap is reflected backward into the radical cavity, partially lining it.

While both of these methods have their advantages, I believe the best method is the formation of a tongue-shaped flap from the meatus. This is formed in the following manner: A director is inserted through the posterior wound into the canal and pressed down close to the floor, the point of the director emerging through the meatus. The meatus is then split by means of the knife passed along the groove of the director, care being taken that as the knife approaches the concha it enters the canal at its very lowest point, at its antero-inferior angle. The blade of the knife is then turned backward and upward and swept around the margin of the meatus into the concha, it being carried as far upward as the anterior crus of the antehelix. In this way the meatus is uniformly enlarged. The cartilage and fibrous tissue are then removed from this tongue-shaped meatal flap, and the flap is turned upward and backward into the posterior opening and stitched to the raw surface on the

posterior aspect of the auricle or, in some cases, to the very lowest portion of the temporal fascia or temporal muscle. This reflected skin flap will, when the auricle is sutured backward into position, cover the roof of the tympanum and a portion of the roof of the mastoid antrum.

A few words should be said here about the extent to which the external auditory meatus should be enlarged. I believe in forming a rather large meatus, as in this way free drainage of the radical cavity is secured and dermatization is very much hastened. The degree of enlargement will in every case depend on the size of the radical cavity. With a large radical cavity the new meatus should be much larger than if we have a narrow mastoid and consequently a small radical cavity. It is particularly important to secure a very wide meatus in children. In these young subjects the subsequent dressings are difficult, owing to the terror of the child and to the necessary pain incident on the procedure, and it will be found that the ultimate result will be very much better if in young subjects a very wide meatus is formed; that is, if a large conchal flap is made.

After the plastic operation has been performed, we next come to the treatment of the radical cavity itself. My own preference is to line this cavity completely with a Thiersch graft at the time of the primary operation. I invariably do this except in cases where there has been exposure of the dura in the middle cranial fossa, where the sinus has been exposed, or where the case has been so foul at the time of operation as to preclude the possibility of a graft adhering if introduced. The Thiersch graft is best taken from the inner aspect of the thigh and should be sufficiently large to completely line the radical cavity. While the graft is being cut, the radical cavity should be thoroughly packed with a strip of gauze, saturated in a 1/1000 adrenalin chlorid solution, so as to completely exsanguinate it. It is also well to pack the posterior wound and the meatus in a similar manner, so that the tissues may be absolutely bloodless when the operator is ready to introduce the graft. With a bloodless field the graft is easily put into position. The technic, roughly, is to slide the broad graft off from the spatula so as to completely cover the large radical cavity; that is, one margin of the graft is placed in contact with the anterior wall of the meatus, being held here by means of a director in the hands of an assistant, and the spatula is removed so that the graft really bridges over the entire cavity. The graft is then pressed in at its center by means of the director until it roughly applies itself to the radical cavity. A glass pipette is then introduced beneath the graft and the air is sucked out. The graft will immediately fall into position and apply itself closely to the entire radical cavity. It is then held in position by pledgets of cotton covered with aristol, these being packed tightly, so that perfect apposition between the walls of the cavity and the graft is obtained. A sufficient number of pledgets are introduced to hold the graft perfectly in position; that is, to fill up the entire radical cavity. A strip of sterile gauze inserted into the cavity completes the dressing. A graft should next be applied to the margin of the concha, cut in forming the flap for enlarging the meatus. This may be applied through the posterior wound, the graft being introduced posteriorly and wound around the cut margin of the enlarged meatus until it appears in the concha. It is then carefully spread out so as to completely cover the raw surface on the floor of the meatus and on its posterior aspect. The posterior wound is then entirely closed either with silkworm gut sutures or with the subcuticular suture of silver wire, if this is preferred. The ordinary dressing is then applied.

In cases where the disease has been so extensive as to necessitate exposure of either the sinus or the dura in the middle cranial fossa, it is not my practice to employ a primary graft. These cases may either be grafted secondarily, at the end of two to ten days after the primary operation, or they may be allowed to heal by dermatization, from without inward. In every instance the posterior wound is sutured. Where the dura or sinus has been exposed extensively, it is my practice to pack off the dural area with a separate strip of gauze, the lower portion of the middle-ear cavity being packed off with a strip of iodoform gauze brought out through the external meatus. A second strip of gauze is similarly packed over the exposed dural area and brought out of the meatus above the first strip. The posterior wound is then completely sutured. In these cases it has been my habit to use a meatal graft at the time of the primary operation, this graft being applied over the cut edge of the concha after the posterior wound has been sutured. In other words, the graft is introduced through the external auditory canal and made to cover the cut surface. It is extremely important to employ a meatal graft wherever possible, as it prevents the appearance of granulation tissue about the margins of the meatus during the process of healing and the patient is spared a great deal of pain during the subsequent dressings.

Posterior drainage is seldom employed in the radical operation. In some cases, where the operation has been very extensive and complete suture of the wound would leave a dead space at the lower angle, I have inserted a strip of gauze into the lower angle of the wound to serve as a drain. This practice has also been employed in certain cases where the sinus has been exposed in its lower portion. This gauze drain is removed at the first dressing and is usually replaced at the second and third dressings, after which time it may easily be dispensed with

The results obtained from this operation have been exceedingly satisfactory in my cases. In over 85 per cent. of the cases the ear has become perfectly dry after the operation. In most of the remainder the discharge has been greatly diminished in quantity. In only a very small proportion—I should say less than 2 per cent.—has a second operation been necessary.

Regarding the mortality of the procedure, I think we may say that the operation is entirely devoid of risk. In a few cases the patients have died, but in every instance these patients were probably suffering from intracranial disease prior to the radical operation, and the radical operation simply failed to relieve this condition, but could not be held responsible for the death of the patient. The only case directly traceable to the operation was that of a patient who died of pneumonia following the administration of the anesthetic.

The effect of the operation on the hearing has been very satisfactory in my cases. Out of over two hundred and fifty operations performed, in only a very small proportion of cases has the hearing been made worse. In a considerable proportion of cases the hearing has improved, and in the balance it has remained the same as before operation.

In very few of the above cases were there any labyrinthine involvement. I have purposely omitted mentioning the symptoms of labyrinthine involvement, as they simply form an addition to the clinical picture and

merely render the indications for operation more urgent. Labyrinthine involvement is frequently unrecognized until the time of operation either for an acute middle-ear suppuration or for a chronic suppuration. When symptoms are present, they consist of vertigo and a certain amount of incoordination. The vertigo may vary considerably, but the patient tends to fall to the side opposite to the ear involved. Nystagmus is also a symptom frequently observed, although it should not be depended on too much, as it occurs in cerebellar abscess and has been noted in other intracranial conditions. One sign of considerable significance is that if these patients are made to put their feet together and then are asked to hop forward with the eyes closed they are unable to perform this movement in a straight line. This sign was first demonstrated by von Stein, of Moscow. In addition to the above symptoms, there is usually marked impairment of hearing, diminished bone conduction and a lowering of the upper tone limit. This last sign is present only when infection takes place through the oval window.

Owing to the fact that many fatal cases of meningitis and cerebellar abscess have been traced directly to infection of the labyrinth, the surgeon should always remember the possibility of such an involvement in every case of chronic middle-ear suppuration. In the cases which have come under my observation, with a single exception, there have been no symptoms which would lead the surgeon to suspect that the labyrinth had been attacked. In this one case there were well-marked vertiginous symptoms. Whether the symptoms point to labyrinthine involvement or whether these symptoms are absent, it is the duty of the surgeon in every case of middle-ear suppuration, and more especially in the chronic cases, to assure himself at the time of operation of the condition of the labyrinth. If symptoms indicative of labyrinthine involvement have been recognized prior to operation a most careful examination should be made at the time of operation in order to determine whether or not the labyrinth is involved. The most frequent avenue of labyrinthine infection is undoubtedly the horizontal semicircular canal. This has been involved in most cases which have come under my observation. In other cases, infection takes place through the oval window. This was the avenue of infection in one of my cases.

The proper operative treatment consists in thorough drainage of the labyrinth. If there is a small carious area over the horizontal semi-circular canal, frequently the only treatment that is necessary is to remove this softened bone, thus entering the lumen of the canal. A careful inspection of the oval window should then be made to see whether or not this suppuration has extended to the vestibule. In a certain number of these cases, the disease is limited to the horizontal semi-circular canal, and all the interference that is necessary is to open the lumen of the canal widely and to pack the wound with a strip of iodoform gauze, so as to secure free drainage and prevent further infection. If the suppurative process seems to involve the entire labyrinth, that is, if, in addition to an erosion over the horizontal semi-circular canal, there is a purulent discharge from the oval window, it is then necessary to destroy a considerable portion of the labyrinth. When there are signs of involvement of the vestibule, that is, when there is a purulent discharge coming from the oval window, the operator first enlarges the oval window downward and forward by means of the curette and a small gouge, thus draining the vestibule and also the lower portion of the cochlea. If the infection is confined to the vestibule, this drainage will be sufficient. If, however, there is also erosion of the horizontal semi-circular canal, it will be necessary, in addition to the vestibular drainage, to remove the carious bone in the region of the horizontal semi-circular canal in exactly the same manner as though this latter region were the sole site of involvement. It is also wise, in these extensive cases, to break down the outer wall of the horizontal semi-circular canal to a point as near the vestibule as possible, at the same time enlarging the oval window in the manner already described. Naturally, the opening in the horizontal semi-circular canal can not be continued directly to the vestibule, on account of the course followed by the facial nerve. The outer wall of the semi-circular canal should be cautiously removed in the direction of the vestibule to a point just above the facial nerve. Enlargement of the oval window downward and forward does not menace the integrity of the nerve and secures complete drainage of the labyrinth. If this narrow bridge of bone directly above the oval window is left intact, the integrity of the facial nerve can be preserved and at the same time the labyrinth be thoroughly drained.

In cases of labyrinth suppuration, in which the radical operation has been performed, it is, of course, understood that primary grafting can not be employed. The suppurating focus within the labyrinth should be carefully isolated by means of a separate iodoform gauze packing, and no attempt should be made to graft the diseased area until all purulent or seropurulent discharge from this region has ceased. Secondary grafting may be employed in these cases as soon as there is no serous or seropurulent discharge from the labyrinth. Four cases of labyrinthine suppuration have come to my attention during the past year. In every instance the patients have made a complete recovery, and in only one case were there any symptoms of labyrinthine involvement prior to operation.

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DISCUSSION.

DR. FRANK M. CUNNINGHAM, Macon, Ga., said that he recently had an experience like this: Several days following an apparently normal mastoid operation his patient had a chill, followed by a sudden rise of temperature. In accordance with the rules laid down he thought he would expose the sinus. He maintains, in conditions of meningitis with symptoms not unlike those in beginning sinus thrombosis, that if we open the sinus and make an artificial thrombosis, we produce the very worst effect on the meningitis; we have aggravated rather than improved the condition. Dr. Cunningham said that in the intermissions of a high temperature and a low temperature patients sometimes present an almost normal character, especially children. They will be so well they will want to get out of bed, and he is led to believe that attention to the general appearance of the patient does not count for a great deal in sinus thrombosis. The mental state of patients in this condition is sometimes clear up to the moment of death. He said his experience in over fifty cases in the last two years has been that the effect of the radical operation on the hearing is bad. He had had only a few patients in whom the hearing was unchanged; in the great majority the hearing was a great deal worse. For the first six months the hearing was apparently better; after that time it diminished rapidly. At the time of operation the patient should be told of the ultimate effect on the hearing.

DR. HERBERT E. SMYTH, Bridgeport, Conn., said that while Dr. McKernon stated that direct infection of the jugular bulb from the tympanic cavity usually occurs in young children, he had recently had a fatal case in a boy of 15. The patient was

taken with pain in his right ear, April 13, followed a few days later by a free discharge, there being no other local symptoms, and his temperature, which had been above 104 F., dropped to normal. When seen twelve days later, or on the twenty-third day of the illness, it was learned that his temperature had continued irregularly high during the interval, with the occurrence of chills. The middle ear had recovered, but there was tenderness over the posterior part of the mastoid, stiffness of the muscles of the neck, especially of that side, and a throbbing headache. On opening the mastoid very little disease was found, and with the exception of free and persistent venous bleeding, there was nothing to indicate involvement of the sinus. For a few days the patient seemed better, when he had another chill and a recurrence of the high temperature. Further operative measures were refused and chills, chilly sensations and high temperatures became the rule until the patient's death on the forty-fifth day of the illness. No autopsy was allowed, but his symptoms made positive the diagnosis. The temperature from the time it was systematically taken on the twenty-fifth day of the illness was remarkable, going repeatedly above 105 F., often above 106 F., and twice above 107 F., the highest being 107.6 F. by the mouth. On two or three occasions only, during the entire illness, did it go down to normal.

DR. WENDELL C. PHILLIPS, New York City, said that in regard to opening the lateral sinus, when performed by men who have the judgment possessed by the authors of these papers, it is a safe procedure, but it should only be done in the presence of positive evidence of disease. For younger operators and those less experienced, he said, a word of caution is necessary. Exploratory opening of the lateral sinus is dangerous. He has seen it opened and an apparently healthy state of affairs revealed, to be followed by thrombosis. Dr. Phillips said he fails to understand how it is possible for Dr. Dench to get any benefit from skin grafting at the primary operation. He can not understand how a skin graft put on bare bone, without granulations, is going to hold. As to the final results in Dr. Dench's cases, he has about the same experience that most of us do; in nearly 80 per cent. of cases we get perfect healing, without any further pus. At the same time many of these patients have to be watched for a long time before getting that result, and there is a considerable proportion of the cases in which the patients require further operative interference. As to the hearing, he believes the radical operation has no particular effect one way or the other.

DR. CULLEN F. WELTY, San Francisco, said that his only criticism is that Dr. Dench makes the statement that every patient with chronic suppuration of the middle ear should be operated on and then follows it with qualified indications. To his notion, Politzer makes a very clear and concise division of this subject, dividing the indications for operation into objective and subjective symptoms.

DR. G. L. RICHARDS, Fall River, Mass., said that the medical pendulum seems to swing from one extreme to the other; one year ago we went home and told our patients that every one must be operated on, and this year we will tell them that a wave of conservatism has struck us. He asked Dr. Dench what his experience is relative to the time required for complete cure after operations for chronic suppurative ear trouble; the time required when he did not use skin grafting, and when he uses it now; when the patients get well or disappear from observation. What is the time in days, weeks, months, or years? It is important for us to know.

DR. JOSEPH A. STUCKY, Lexington, Ky., said he would like Dr. McKernon in closing the discussion to emphasize two or three points, the most important being the pathognomonic indications for interfering with the lateral sinus, or doing secondary operation and opening the sinus. He said regarding the fact that Dr. Dench does not advocate the blood clot, he has, with a good deal of trepidation, entered that field and used the modified blood clot, and could report on his thirty-third case. Three patients were operated on the week he left. The result has been very gratifying where he used the perforated rubber tube but no gauze. After radical operation he has used this perforated tube instead of packing. He allows this tube to remain two or three days, after which he uses no dressing at all.

DR. W. C. PHILLIPS, New York City, said he had a case recently of a patient with acute mastoiditis, which became subacute, with a profuse discharge from the ear. For about ten weeks the pus poured out through the external meatus. After ten weeks he did a mastoid operation and discovered that the entire covering of the lateral sinus was necrosed. The lateral sinus was black and it was difficult to compress it. His diagnosis, in the absence of temperature, was aseptic thrombosis. The patient made a good recovery. He wanted to know if we have cases of aseptic thrombosis.

DR. HENRY O. REIK, Baltimore, said that where Dr. Dench speaks of his preference for the open method, and not having recurrence by blood clot operations, that the blood clot either breaks down or unites and we have primary union. He opposed Dr. Dench's view that "every case of chronic middle ear suppuration should be subjected to middle ear operation." We have heard the other side of the case, he said, ably presented by Dr. Theobald, representing the other extreme, and Dr. Jack holds a middle ground in recommending middle ear operations. He has observed a great deal of Dr. Theobald's work, having been his assistant for many years, and he follows his treatment largely in the beginning work of otitis media. He sees a large number of cases in which the patient can be cured by attention to the ear, syringing through the external auditory canal with a middle ear syringe. Then a number of cases which do not yield to that treatment get well under middle ear operations. So he finds a small percentage of chronic middle ear cases demanding radical operation.

DR. FRANK ALLPORT, Chicago, said it seems as if there must be some middle ground between the two extreme views expressed. He does not see how the ultraconservative gentlemen, with regard to the mastoid operation, are going to reconcile their views with actual conditions. What is going to be done in a case in which there is persistent discharge where to the best of our knowledge and belief the discharge proceeds from a point that is beyond the middle ear area? He does not see how ossiculectomy and introducing drainage can assist in those cases where there is antrum involvement. While he is not prepared to say that it could not be, he doubts very much whether ossiculectomy will cure antrum necrosis. Treatment of the nose and pharynx are useful, but if you have an actual condition of necrosis that is beyond a visible area, or beyond a reachable area by intramedial means, he does not see what is going to be done in those cases except operate, any more than a diseased appendix is going to be permitted to remain because of conservatism in the treatment of appendicitis. In a case of caries in any other part of the body, because of conservative tendencies, should we allow a necrosis of any structure to go on year after year, suppurating and necrosing still further and do nothing? Dr. Allport said the necessity for activity is highly necessary in cases of temporal bone necrosis over and above necrosis in other parts of the body. Necrosis of the vomer might be allowed to go on unattended, by a conservative surgeon, for some years without doing essential damage. But every man of experience realizes that temporal bone necroses are contiguous to vital parts. A discharging ear accompanied by well-marked mastoid or brain symptoms should be operated on at once. Cases of discharging ears unaccompanied by such symptoms may be treated by suitable conservative measures for a few months, after which if the discharge does not cease the radical mastoid operation should be performed.

DR. WILLIAM L. BALLENGER, Chicago, said that the particular question in reference to Dr. Dench's paper is whether the radical mastoid operation is a justifiable procedure or whether we should take up the so-called "conservative" methods. There is great danger of our getting wrong opinions as to the real situation if we believe all that has been said in this discussion. This means that we are in the midst of an educational transition, our ideas are changing, we are beginning to differentiate the indications for the radical mastoid operation; it is just as good an operation as ever for selected cases, but in certain other cases the Heath, or some other operation, is bet-

ter, as the hearing is preserved or improved. If we were to follow the impressions some of us are getting we would abandon the radical operation and substitute therefor simple washings and the other local treatments we tried many years ago with disastrous results to many patients, and the result would be that in the next ten years many more patients would die of meningitis and sinus thrombosis, than if we continue to hold pretty fast to the lines we have been following for the last ten years. In spite of this, we should study our cases more carefully along the lines presented in the papers and try the simpler methods, but failing with them we should, as in the past, look to the radical mastoid operation. Dr. Ballenger said he stands for "rationalism" rather than that type of "conservatism which would cure all patients without surgical interference. Rationalism may mean true conservatism, or radicalism. It means know your case and do for it what is indicated, whether it be simple treatment or the radical operation.

DR. ALEX. B. RANDALL, Philadelphia, said that all the chronic suppurative conditions are due to cholesteatoma. That is not absolutely true, but truer than that all need operation; true enough to be borne in mind by a great many who have these things to deal with. The engrafting of the epithelium of the canal, especially of the drum head, on the surface of the tympanic cavities and the formation therein of laminated masses of cholesteatoma is an essential process in a majority of chronic ear suppurations.

He said he had been at work on this subject for the past twenty years and had been studying it closely, with about forty cases a year to put on record. He has treated and cured hundreds of patients, although very few have been subjected to ossiculectomy, or operation on the mastoid or tympanum. Operation, he said, is in fashion, not because Dr. Dench and others really believe in doing these things wholesale, but because they are so understood by the men who take the papers without a grain of salt, as the text of his present paper can not be taken. Dr. Randall thoroughly believes in doing the Stacke operation. We can frequently go in, not from the surface of the mastoid, but from the depths of the canal, as done by Wolff and Stacke, cut a niche in the back wall opening into the attic, extend the opening freely into attic and antrum and clear up the deeper portions of what we must still call the tympanum; remembering, as has been frequently emphasized, that the middle ear reaches from the tube-mouth in the pharynx to the remotest pneumatic cell. We must call these the tympanic cavities, three of them, the lower drum-cavity, the attic space above and the antrum behind. We can clean up all three and pursue the disease as far as need be, and need not go any further outward toward the mastoid than is requisite. He has never been a convert to the Tiersch graft, but has had a great deal of satisfaction in dealing with the matter in that when he has the wall of the canal laid out here like a glove finger, he dissects off the periosteal layer, turns it down, dissects out all cartilage as clean as possible, and turns up as much of the skin material as he can get. With these two grafts, each the full size of the available tissue, one skin the other periosteum, held there by a wick or tube, he gets results almost or quite as speedy as those obtained by the formal, to patients rather formidable, skin-grafting operation.

But while we have heard much in recent years of these radical cures of chronic suppurations, the chapter as to the after-treatment for years of many which need quarterly cleaning out of the collecting epithelium or even the cure of recurring suppurations is only beginning to be written. The conservative who does this without operation is looked on as a dangerous and unscientific reactionary. Is he right or his generally less experienced critic?

DR. G. ARTHUR DILLINGER, Pittsburg, Pa., said he is firmly convinced that there is even greater danger in being ultra-conservative in the mastoid operation, and treating suppurative ear conditions, than in taking what appears to many here the extreme radical view of Dr. Dench.

He called attention to one who has just been honorably retired after forty years' experience in the largest clinic in the world, Professor Politzer of Vienna, who, although probably not mentioning it in his earlier editions, in his private work, and public clinic as daily routine, carries out the very ideas expressed in the paper just read. The same, he said, is true of the other otological clinics of Europe. As one of the older members of our section warns the younger men to be extremely careful of the radical views expressed, he would most seriously urge the older operators not to delay too long and wait for the results which so seldom follow weak attempts at "washing out" and "dusting in," but to accept the more radical views of Dr. Dench, and with chisel and curette go to the bottom of the suppuration.

DR. HENRY GRADLE, Chicago, said that with regard to the indications for the radical operation in chronic suppurative otitis, he wished especially to oppose some of the extreme views on either side of the question just brought out. When we deal with cases presenting urgent symptoms there can not be any discussion, as the necessity of operation, radical operation, is demanded without hesitation. When we deal with cases giving a history of repeated acute exacerbations we must also be prepared for operation, because these cases are otherwise likely to lead to a fatal issue. When we deal with so-called cold cases, where there are no imperative symptoms present, there is no reason for any immediate operative action, and unless we can tell from an objective examination that conservative treatment is apt to fail there is no reason why we should not try conservative treatment. If we can diagnosticate cholesteatoma we waste time by conservative methods. Were we able to diagnosticate necrosis we would also waste time, but we can not always diagnose necrosis. Necrosis is irremediable except by surgical means. Superficial caries can, however, heal without active surgical intervention. Dr. Gradle said he has repeatedly pointed out that the odor is a fair guide as to the indications for operative or non-operative treatment in doubtful cases. If we can overcome the odor by syringing followed by boric acid insufflated in one or two sittings there is no reason for operating. He not only has the records of hundreds of such cases on his books as cured, but can recall dozens of cases cured ten to twenty years ago who have stayed well, although a few have had an occasional readily-cured relapse. In a small proportion we can remove the odor only by intratympanic syringing through some fistula. Occasionally, too, although not often, the odor may disappear only after repeated flushing with alcohol, alternating with carbolated glycerin. If the persistence of the odor under these measures indicates the relative inaccessibility of the suppurating focus, capillary drainage by packing may still succeed. It requires good absorbent gauze and deep packing. In the more hopeful class of cases the discharge loses its odor generally before stopping completely. In another class more liable to relapse the odor does not disappear until the ear is entirely dry in consequence of gauze packing. On an average he has found that packing leads to a complete cure in about one-half the cases of chronic suppuration in which the odor resists syringing. It fails absolutely in about one-sixth of these cases and these patients can only be cured by operation. In about one-third packing leads to a partial success. The discharge becomes inodorous, but does not cease entirely, or at least returns if treatment is discontinued. In this last class of patients the question whether or not to operate depends somewhat on the patient's condition in life and his own choice. As long as there is no odor we can feel sure that the disease is not aggressive.

DR. JAMES F. MCKERNON, New York City, said he had been asked for his personal experience; that is all he has given. In regard to those cases where the symptoms were typical of sinus thrombosis after a mastoid operation had been done, sometimes not, but if sufficient time had been spent he believes in each individual case we would find the evidence of a clot present which causes the symptoms. That is, where typical symptoms are present and where every other disease has been eliminated we must go back to the original focus of infection, and the cause is right in the sinus, because when it is opened we get a free blood current from behind, the symptoms clear up and the patient gets well. As to the symptomatology being quite similar between certain forms of sinus thrombosis and meningitis, he thinks in the majority of cases they are almost opposite. One or two cases do not make a rule.

In regard to opening the sinus at a primary operation, he

has never seen infection of the sinus opened at primary operation. The field is sterilized and it is just as secure as opening into the brain cavity after perfect sterilization of the field of operation. Do not open the sinus unless there are physical signs back of all the symptoms the patient has been exhibiting prior to the operation.

As to the reasons for opening the sinus, the physical signs, with a collection of pus in the mastoid, with wide excursions of temperature, constant remissions and chilly sensations are present and the sinus looks unhealthy, he believes it ought to be opened.

In regard to the aseptic sinus Körner several years ago reported several cases of aseptic thrombosis of the sigmoid sinus. In 1896, before the Otological Society in New London, Dr. McKernon said that he reported two cases of aseptic thrombosis.

DR. EDWARD B. DENCH, New York, City, said that he agreed with Dr. Cunningham that the Eustachian tube is the hardest to deal with. He is conservative, just as Dr. Phillips is, and tries every method of treatment. He does not advise the radical operation until these cases have been subjected to a long course of treatment. In regard to skin grafting, he does not make any. The grafts will adhere if put on properly. It is a matter of technic and getting the cavity thoroughly clean and thoroughly dry, and the use of packing. As to the length of time in which he got the best results: One patient he treated two weeks and five days and another three weeks, with very good results under the method of healing by granulation. The usual length of time is nearly eight weeks. More patients will get well under primary grafting than if the cavity is allowed to heal by granulation.

In reference to what Dr. Randall said, it seems the question with him apparently is whether to begin in the canal and work outward or to begin outward and work inward. Dr. Dench does not think the patient is harmed by taking away sufficient of the mastoid process to get free access to the origin of the blood clot so as to obliterate the tympanic space. Personally he can not do that except in a small proportion of the cases, as he is afraid of the facial nerve and of doing damage to the semicircular canal. It is a question of technic, and it makes no difference whether he obliterates a smaller or greater part of the mastoid cells. We must remember that occasionally we do find cases in which we have very little trouble with the small amount of cholesteatoma there. In these cases he takes away enough of the mastoid cortex to give a view of the tympanic cavity.

With reference to the Thiersch graft, the more the method is used and the more expertly it is performed, the better the results will be.

INDICATIONS FOR OPERATIVE INTERFERENCE IN CEREBRAL COMPLICATIONS DUE TO CHRONIC SUPPURATION OF THE MIDDLE EAR.*

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SAN FRANCISCO.

This important subject in the field of otology calls for a classification of cerebral affections that are the result of chronic middle-ear suppuration. Such complications divide themselves into:

1. Inflammation of the meninges, which include (a) extradural abscess, (b) intradural abscess, (c) purulent and serous meningitis.
2. Diseases of the brain, which include (a) abscess, (b) diffuse inflammation.
3. Diseases of the sinuses of the dura mater.
4. Diseases of the internal carotid artery.

I wish it to be understood that I believe in the operative treatment of purulent meningitis due to chronic suppuration of the middle ear for the following reasons: First, because the constantly increasing numbers of these affections that have been cured by drainage make this seem the only way in which we may hope to achieve more success than we have up to the present, and, second, the differential diagnosis of meningitis and brain abscess is at times so involved that by operation in ten such cases one brain abscess will be found that was not suspected.

All cerebral complications are serious, and the best advice that I can offer is to operate immediately on the onset of cerebral symptoms. By so doing the otologist is sure of eliminating some of the more serious affections. In other words, early operation for cerebral affections due to ear complications should be considered conservative surgery. Without doubt, unnecessary operations will be done, but the good results that will usually follow will more than compensate for the added risk. No doubt cases will be sacrificed; probably from one-half to 1 per cent., but, on the other hand, if one waits for cerebral complications to develop the mortality will be increased from 20 to 40 per cent.

At this place I wish to quote some of Jansen's findings. In 184 cases of cerebral complication he found 144 of extradural abscess, 35 of sinus thrombosis and 5 of brain abscess. When we analyze this paper we are surprised at the absence of meningeal complications. I believe that not another similar report is to be found. The explanation of this is that Jansen operates on the least possible indication. Many members of this Section have seen more or less of his work, and all will say that it is well done. It is a common criticism that he does unnecessary operating, but when confronted with such statistics as I have quoted it is readily seen wherein the good lies. The small number of brain abscesses in relation to the whole number of cerebral affections is undoubtedly due to such early intervention. It is also worth noting that the number of sinus thromboses is comparatively small. I take it for granted that perisinus abscess was included as an extradural abscess. Anatomically the same, clinically they are different. I use Jansen's small hook-like instrument, which I call a searcher. I think that this instrument has been responsible for finding many extradural abscesses that otherwise would have been overlooked. I have found a few that were not suspected before operation.

I wish particularly to emphasize the advisability of early operation. A life may be sacrificed, I am sorry to say, but the more skilled the surgeon the fewer the number of patients sacrificed. It must be borne in mind that one is dealing with a life-saving device and heroic efforts are necessary.

Of late there has been considerable criticism regarding the indications for the radical mastoid operation, some authors claiming that cerebral affections, particularly meningitis, are induced by this procedure. I am led to believe that such criticisms are based on insufficient data both as to number of operations and number of cases. The results of ten or twenty surgeons should be accepted and so make an average, as one operator may have few infections following the operation, while another equally good surgeon will have a high rate of mortality. My conclusion in regard to chronic suppuration of the middle ear is that every indication for operation should be strictly complied with, that a chronic discharge from the ear without any other symptoms should be considered an indication for operation if the condition remains un-

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

cured after a treatment of six or eight weeks. The accidental mortality of the interval operation is about 0.5 per cent.

If one insists on having well-defined and positive indications before doing the operation, such cases will progress steadily and sooner or later will be complicated by cerebral symptoms. For example, in 100 such cases what proportion of the patients will die from lack of operation? In a mortality table made up by myself,[1] I proved that 17.5 per cent. of patients with chronic suppuration of the middle ear die of cerebral complications if not operated on. I believe that 25 per cent. would be nearer the right figure. For argument accept the latter, making allowance for this particular condition, and I should say that at least 10 per cent. would succumb without operation; with operation for the cerebral affections probably 5 per cent. would recover, while with an interval operation all would recover. I say all because we are dealing with a preferred risk and, as we allow it on the one side, it should be allowed on the other.

The polymorphonuclear leucocytes are of the same value in cerebral infections as in bacterial invasions in other parts of the body; and it must not be forgotten that in some cases the infection may be so overwhelming that no protective reaction will be elicited, and instead of a leucocytosis we may be confronted by a leucopenia.

EXTRADURAL ABSCESS.

Extradural abscess is the most frequent cerebral affection following chronic suppuration of the middle ear, and is the most important, in that 90 per cent. of the remaining cerebral affections are caused by extension from an extradural abscess. The symptoms of this condition are seldom of such a nature that an absolute diagnosis can be made, though well-defined symptoms at times are present. For example, if following the mastoid operation there is meningeal irritation, fever, intense pain over the entire temporal bone without other evidence of brain pressure, this should be considered an indication for further operative procedure. On the other hand, it must be borne in mind that this group of symptoms is not pathognomonic of extradural abscess, but may come from meningitis and brain abscess. Exudate between the dura and the skull cavity may cause pressure symptoms. Brain symptoms, such as sleepiness, dizziness, vomiting, optic neuritis and nystagmus, may occur, associated with extradural abscess, yet the appearance of these is not to be relied on in making a differential diagnosis.

When the extradural abscess is situated in the posterior cranial fossa it is seldom to be diagnosed by local symptoms. In such cases torticollis has been noted by Jansen, Lane and Page, and impediments of speech, when located on the left side, have been observed by Pritchard and Macewen. The rapid appearance and disappearance of threatening symptoms, especially following the discharge of large quantities of pus and a subsidence of the symptoms, is an absolute indication for operation; this is especially true when the quantity of discharge is greater than can be allotted to the middle ear.

If after a radical ear operation for chronic discharge, dizziness and headache, the headache recurs weeks after operation and pus is discovered by a pneumatic speculum, this is proof positive of the presence of an extradural abscess and operation is indicated. When I say that all patients presenting cerebral symptoms should be operated on, I am fully aware that the retention of pus in the mastoid or the presence of a cholesteatomatous mass may cause the same symptoms from pressure. The operator must decide what is best to be done. When a lesion is found that may be responsible for the cerebral symptoms, further operation should be discontinued, unless there are definite symptoms of true cerebral complications. Körner and Lane advocate the exposure of the middle and posterior cranial fossæ in all cases of purulent or cholesteatomatous affections of the temporal bone which run their course without intracranial symptoms. While I think this unnecessary, I do believe that in an acute exacerbation of chronic ear suppuration accompanied by purulent or cholesteatomatous formation the dura should be uncovered in the middle and the posterior fossæ. Fistulous formations are always indications for further operative procedure.

1. Cal. State Jour. of Med., October, 1905.

INTRADURAL ABSCESS AND PURULENT MENINGITIS.

Intradural abscess is rarely found. The indications for operation in this particular affection are practically the same as those for purulent meningitis. The diagnosis is almost impossible. What at one stage is an intradural abscess may in a short time become a purulent meningitis.

Statistics are somewhat confusing as to the frequency of diffuse purulent meningitis. I would class it as fourth in the group of cerebral conditions due to suppuration of the middle ear. In a large majority of cases, especially when chronic, diffuse purulent meningitis is simply an extension of the pathologic process to the membranes of the brain. It will often be difficult and sometimes impossible to make a positive diagnosis.

On opening the skull and failing to find an extradural abscess, without further indications, one should proceed as for a purulent meningitis. However, when more extensive pathologic changes are found, such as caries of the labyrinth, with fistula formation, an uncovered facial nerve, ulceration of the uncovered dura, fistulous openings through the dura, perisinus abscess or sinus thrombosis, these furnish positive indications for further operative interference. They constitute a group of pathologic lesions, any one of which may be responsible for purulent meningitis. Furthermore, fever, pain, either localized or general, sleepiness, delirium, twitching of the face, hands or extremities should be considered indications for further operative interference.

The place serous meningitis occupies in relation to the other cerebral affections is hard to define. The differential diagnosis between serous and purulent meningitis is only to be made positively by lumbar puncture. Hypertension of the fluid is of little importance, as it may be present in many cerebral affections and at other times be absent. Moreover, it is difficult to measure the degree of tension with sufficient accuracy to make a diagnosis. The indications for operative interference are the same as in purulent meningitis, but in the absence of bacteria there is a much better chance for a favorable termination. My opinion is that serous meningitis is present frequently, and that all cases that develop cerebral symptoms following operation and in which the patients recover without cerebral operation should be so classed. Their gravity depends on extreme pressure and is not dependent on bacterial invasion.

BRAIN ABSCESS.

Brain abscess is third in frequency among cerebral affections due to chronic suppuration of the middle ear. The indications for operation vary according to the loca-

tion of the lesion, although there may be brain abscess without any localizing manifestation. This form of brain abscess is the most frequent, and because of this fact the indications for operation are much more difficult to classify. An operator expecting to find a cerebral abscess encounters a large collection of pus between dura and bone that may account for all the symptoms on which his diagnosis of brain abscess was based, the further procedure should depend on the pathologic condition present and his surgical judgment.

Symptoms of increasing brain pressure, such as headache, dizziness, vomiting, loss of memory, delirium, disturbances of speech and vision, slow pulse, optic neuritis, change in the size of the pupil, slow cerebration, apathy or somnolence, must be carefully looked for and cautiously analyzed. Long-continued headache, localized in the parietal or occipital regions, is an indication for operative interference, as also repeated projectile vomiting with cerebral symptoms. Slow pulse is at times so characteristic a symptom that an operation may be indicated on this one manifestation (Macewen). Choked disc of itself is an indication for operation. The differential diagnosis will usually assist materially in arriving at accurate conclusions; probably 40 per cent. of brain abscesses are accompanied by this symptom. However, there is a condition of the ocular papillæ that is not choked disc, but which may easily be mistaken for it and which may become a choked disc. In these borderline cases the general condition must always be taken into consideration, because the symptoms may be produced by comparatively insignificant causes or they may be an early sign of oncoming cerebral affection. Pupils that do not respond to light and accommodation, taken in conjunction with other cerebral symptoms, should also be an indication for operation. The eye symptoms are common in many diseases of the brain. Differential diagnosis must be relied on when the visible pathologic changes are so slight that they scarcely account for the symptoms present. Tension or protrusion of the dura after the bone has been removed and the presence or absence of pulsation of the brain are all important points to bear in mind and will at times give encouragement to go ahead or justify one in closing an operation.

In Körner's 100 cases of brain abscess collected from the literature, 42 per cent. had fistulous openings connected with the diseased bone. Such openings should be sought for carefully in a suspected case, for when found they clear the field wonderfully and establish a diagnosis beyond a doubt. Partial or complete anesthesia of the opposite side, face or arms, is another indication for operative interference. When appearing on the same side they are due to one of three conditions in order of frequency, rupture of a brain abscess and pressure on the opposite hemisphere, meningitis extending to the opposite side, or low crossing of the fibers of the internal capsule. Word-deafness, word-blindness or disturbance of the speech center all call for operation, and the lesions causing them are usually found on the left side.

The indications for operative interference in cerebellar affections will depend largely on the pathologic condition present at the first operation. In cerebellar abscess the indications for operative interference are not so clear as in cerebral abscess. It usually runs its course with various symptoms of irritation and pressure. Among the latter may be included compression of the pons, the vermiform process, the medulla oblongata and the cerebral nerves arising from the posterior cranial fossa. Mechanical yawning, lockjaw (Manier), paralysis of the facial nerve on the same side (Thompson, Heman and Politzer), paralysis of the abducens (Katz), nystagmus (Oppenheim), choked disc (Hausberg and Politzer), ptosis (River, Morse and Sternberg), glycosuria (Ubuch), paresthesia of the extremities (Ceci), absence of petellar reflex (Strümpell), general hyperesthesia (Hymen, Leber), disorders of the bladder (Jansen), cerebral ataxia observed frequently, and paralysis on the same side (Macewen and Politzer). When two or more of these symptoms are present they should be considered as indicating operative interference.

SINUS THROMBOSIS.

Sinus thrombosis is second in frequency of the cerebral affections due to chronic suppuration of the middle ear, and seems to be attended with fewer difficulties of diagnosis than any of the others. At times, however, the differential diagnosis is far from easy. I had a case in which the sinus was filled with pus which communicated with pus under pressure in the mastoid. This had not given rise to the slightest suspicion of a sinus involvement, except that there was some edema just back of the mastoid; this, however, is a symptom that can not be relied on. The man had no fever, chill or sweat and had no fever following operation. I expect to make a special report of the case, as there is only one other on record.

The indications for operation on the sinus are high fever accompanied by remissions to near the normal temperature or below it and usually accompanied by chills and sweats. These are the classical symptoms, the presence of which should always call for operative interference. When an individual case does not do well, and at the same time shows symptoms that suggest sinus involvement, I believe it is truer conservative surgery to open the sinus than to wait for the classical indications. I think the needle should not be relied on as a diagnostic aid in such cases, because the case that is difficult to diagnose is more likely a partial thrombosis and fluid blood will be found by the syringe. If an incision is made, one will have to decide the point by the volume of blood that comes forth. Jansen found optic neuritis in 50 per cent. of his cases of sinus thrombosis; in cases from the Boston Ear Infirmary 30 per cent. was reported.

Hemorrhage from the middle ear arising from an erosion and perforation of the internal carotid artery is very rare. It may be diagnosed by compression of the common carotid, which will produce momentary cessation of the bleeding. All cases reported were fatal. The carotid has been ligated in most of them; in one case on both sides. From the anatomic relations of the perforation of the internal carotid I would suggest at least that the internal carotid be tied as it leaves the petrous portion of the temporal bone and the common carotid ligated below. I believe that the small anastomotic communications can be taken care of by tampon. This operation is of necessity difficult and dangerous; however, one is justified in doing anything that offers any hope at all. I have never read of this being recommended and suggest it from an anatomic standpoint.

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DISCUSSION.

DR. B. A. RANDALL, Philadelphia, said that one point in Dr. Welty's paper surprised him a little, dealing as it does with serious cerebral complications; Dr. Welty has so much to say about extradural abscess and points to Jansen's success which is largely in these cases where operation is merely prophylactic. The value of relief of extradural abscess as a matter of prophylaxis is enormous, and he is sure that many brain

abscesses are due to the presence of previous extradural abscesses. When we look at this group of cases of Jansen's, 144 of them are extradural abscess. Dr. Randall said that when he put on record 50 cases of extradural abscess many years ago it was to the exclusion of at least 100 more that were of such slight degree that there was not a very distinct and positive amount of pus present, but recovery was practically invariable in all. The majority of mastoid cases followed to their full uncovering will show, he believes, that the inner table is already perforated and that there is extradural pus; but he does not think we should call it an extradural abscess. There is pachymeningitis with granulation and a certain amount of fluid between dura and bone in the majority of mastoid patients even when the disease was extremely acute and the patient early operated on. As to results, in brain abscess, for instance, who has such a record of 80 per cent. cured as Sir William Macuen? But Jansen's record is inferior to that of Dench and others in America. The importance of extradural abscess is great and Dr. Welty can not lay too much stress on its relief. It is a prophylactic means of avoiding other cerebral complications, but it rarely has distinct symptoms or is to be grouped with intradural lesions.

The differentiation between a beginning meningitis and sinus thrombosis must be sharp and well defined. If we open a suspected sinus and find a clot formation we have given the case the benefit of early removal, and prevented the septic absorption which would surely follow. If, on the other hand, that case had been one of serous meningitis, and the symptoms at times are not unlike, the formation of a thrombus, even though it be of sterile gauze, would simply cause a back-pressure on all the cerebral vessels and aggravate the very condition for which this special form of surgery had been practiced.

DR. F. M. CUNNINGHAM, Macon, Ga., said that he does not believe lumbar puncture is of value in the differentiation of meningeal complications of otitic origin. If there are meningeal complications at all, whether positive or negative results are obtained from lumbar puncture, an exploratory operation should be done to determine what conditions exist. It is not easy to demonstrate that there is any brain abscess by the symptoms. Dr. Cunningham recalled a case in Macon, Ga., recently, in which he advised exploratory operation for brain abscess, because the patient had a pulse of 48 and showed decided lassitude and somnolence, following mastoiditis for which an operation had been performed. The family physician examined a specimen of the urine and said the low pulse was due to chronic nephritis, and in a few days the patient was much improved and showed no further symptoms simulating brain complication.

DR. JOSEPH A. STUCKY, Lexington, Ky., said that the lessons learned in thirteen cases of his own of cerebral complications, suggest, first, the point emphasized by Dr. Welty, by all means operate early, at the first symptoms of meningeal irritation, especially in acute exacerbations of chronic disease. Second, the difficulty in making a diagnosis of the various forms of meningeal cerebral or cerebellar disease is so great that probably more than one unsuspected abscess occurs in ten cases. Third, the complication of diffuse meningeal disease by meningeal inflammation is, comparatively speaking, rare. Fourth, even when the focalizing or localizing symptoms appear it is too late to operate with the expectation of accomplishing any good, and as Dr. Welty had emphasized, we have everything to gain and nothing to lose by early operation when the meninges are involved. Fifth, the symptoms appearing on the same side as the disease with cerebral or cerebellar lobes involved is more frequent than the books would suggest.

DR. CULLEN F. WELTY, San Francisco, advised early operation in cerebral affections. Cerebral symptoms, when associated or coming alone, should be considered indications for operation. The reason our mortality table in ear surgery is higher than that of Europeans for similar operations is dependent on two factors. First, European otologists find more indications for operation in chronic discharge from the ear, that is, they cure a case by conservative means or by radical operation. Second, they operate in cerebral complications on the slightest possible cerebral symptoms. In other words, they cut short the progress of the disease. He again called attention to the ligation of the carotid artery within the skull cavity and below for the relief of hemorrhage due to erosion.

Clinical Notes

COMPLICATIONS OF ALCOHOLISM.

WITH SOME STATISTICS ON TWO THOUSAND CASES.

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Alcoholism in itself with its distinctive peculiarities and its varied forms, is an affection successfully managed. Indeed, the most alarming forms, as delirium tremens and alcoholic mania, respond surprisingly to treatment. It is in the accidental complications and the sequelæ of continued use of alcohol that we have cause for alarm.

In hastily running over some four thousand (4,000) cases of alcoholism at the Philadelphia General Hospital during the past three or four years, a great variety of affections were found recorded on the history papers as complications. A number of these affections it is true were merely accidental associated troubles from which the patient in some instances was suffering before his acute alcoholism, but there were a number of diseases running hand in hand with alcoholism in a great many of the cases.

The affections marked as complications and that seemed to be most reasonably linked with the alcoholism in two thousand cases were as follows:

Delirium tremens (7 deaths)	49 cases.
Forms of nephritis	28 cases.
Pneumonia	23 cases.
Pulmonary tuberculosis	23 cases.
Myocarditis	20 cases.
Uremia	16 cases.
Bronchitis	15 cases.
Gastroenteritis	14 cases.
Lacerations	14 cases.
Valvular heart disease	11 cases.
Contusions	10 cases.
Leg ulcers	9 cases.
Rheumatism	7 cases.
Pulmonary edema	7 cases.
Fractures	7 cases.
Typhoid	6 cases.
Confusional insanity	6 cases.
Multiple neuritis	6 cases.
Erysipelas	5 cases.
Cirrhosis of liver	5 cases.
Epilepsy	4 cases.

There were also found, as would be expected, cases of: Morphinism, jaundice, mania, diarrhea, retention of urine, gonorrhea, pediculosis, arteriosclerosis, scabies, hemiplegia, anemia, pulmonary congestion, pressure palsy, acne rosacea, pleurisy, cocainism, insomnia, ordinary infections, imbecility, sprains, malingering, hemorrhoids, constipation, orchitis, stricture of urethra, convulsions, dilated hearts, intestinal paresis, dyspepsia, burns, hepatic congestion and chilblains.

There were found to be accidentally in the same class of patients: Malaria, fistula, emphysema, dysentery, paralysis agitans, phlebitis, bulbar palsy, tender feet, contractures, goiter, asthma, saturnism, lacerated perineum, retrodisplacement, hernia, aneurism, impacted cerumen, abscesses, etc.

Head injury, hysteria, opium poisoning, epileptic convulsions, uremia and forms of insanity have to be distinguished from alcoholism; in some cases they are complications of alcoholism or alcoholism is superimposed on a previous trouble.

Mere statistics may be taken for what they are worth.

It is easily seen by those who have come in contact with this class of cases and who look over the records that through carelessness, lack of observation, mistakes, lack of time, etc., on the part of those who have given over the histories as records, the numbers are deceiving. Only four cases of arteriosclerosis and four of pediculosis are recorded in two thousand (2,000). The former must be present in from 80 to 90 per cent. of our cases and the latter in 8 to 10 per cent. Of course, the pediculi in most of these cases do not come to the notice of the physician in the ward.

Throughout it is noticed that for the most part those who drink to excess are the uncleanly, the poor, the ignorant, and especially those of bad heredity. Whatever goes with the surroundings of such classes is going to be associated with the alcoholic. The stomach of the alcoholic becomes upset; he refuses to eat; he starves; he becomes insane. The alcoholic when he does drink water will not see to the trouble of boiling it; he develops typhoid. The alcoholic does not clothe himself properly and he develops pneumonia; he sleeps in the gutter with his head on his arm for a pillow and then develops a pressure palsy—the so-called Saturday night palsy. Alcoholics seem predisposed to erysipelas, and they are liable to fractures and lacerations.

The habits alone of the alcoholic explain many of his complications; his surroundings and his pathology explain others. Filth breeds disease for which whisky and beer are no germicides. Bad morals also breed disease and the man who has contracted a specific urethritis while on a debauch will be difficult of treatment if he keeps up his debauch. Complications multiply and these complications are hardest to treat and may fail of treatment in the drunkard.

The temporary stimulation and tone given the arterioles from alcohol will later, with relaxation, give access to the approaching pneumonia. A lobar pneumonia in a fat man who is in delirium tremens, I think I have never seen cured; in the lean, several. At a glance one can see that the consequences of a spree may furnish a clinic. It is a disputed point as to whether susceptibility to tuberculosis is favored or hindered by alcohol. An authority in Italy claims that the moderate and consistent use of wine inhibits the development of the disease; others hesitate to use alcohol at all when there is any evidence of tuberculosis. Of course, as a contributing factor to disease, there is the vastest difference between the use of alcohol and alcoholism.

Suffice it to say in conclusion that the use of alcohol begets alcoholism and alcoholism begets a host of medical and surgical affections that supply hospitals with cases and bring death to homes.

A MEANS OF AVOIDING HEMORRHAGE FOLLOWING INVERSION OF THE APPENDIX STUMP.*

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Many cases of hemorrhage following the inversion method of treating the appendix stump after appendectomy have been reported since the inception of this operation. Inasmuch as the inversion method has so much to recommend it, it is not surprising that numerous modifications of the original operation have been devised for the purpose of avoiding accidents incident to its practice. But most modifications, while directed against hemorrhage, seem to ignore the anatomic points of the occasional aberrant blood supply; hence the failure to eliminate the possibility of hemorrhage of all methods thus far advanced.

The ileocecal region is supplied by branches of the right colic and ileocolic arteries, which are branches of the superior mesenteric. The ileocolic divides into the anterior and posterior ileocecal arteries. The appendicular artery may spring from either the ileocolic or the

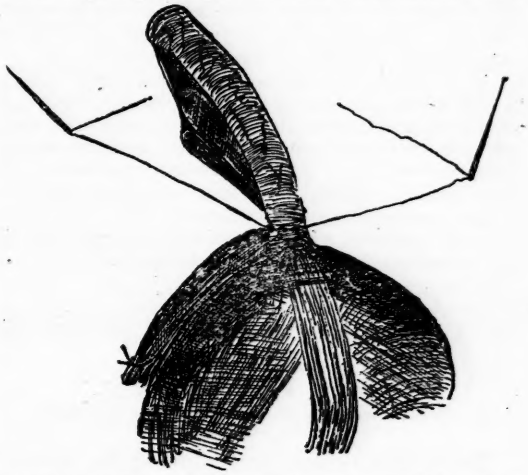

Fig. 1. Passing a double suture through mesenteric border of appendix.

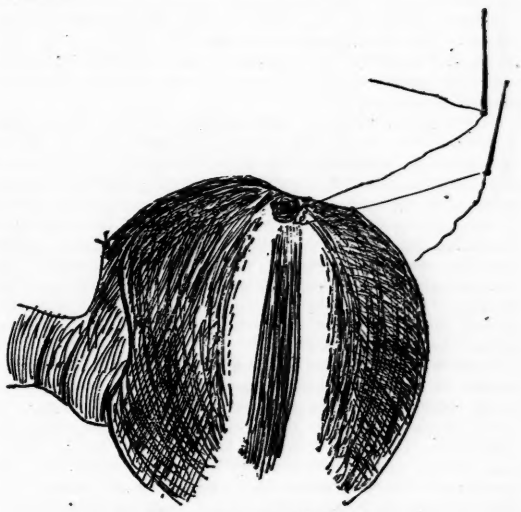

Fig. 2. The stump inverted.

posterior ileocecal. Usually the appendicular artery passes along the free edge of the mesoappendix, in which event tying of the mesentery generally guards against hemorrhage. Occasionally the mesoappendix is absent, in which case the artery will be found passing beneath the peritoneum of the appendix on its mesenteric side. Rarely, too, there is an anastomotic branch of the posterior ileocecal in this same situation, anastomosing with branches of the appendicular artery. If either of these

*. Read before the Lake County Medical Association, Dec. 19, 1907.

two last mentioned conditions exists, manifestly one may readily have hemorrhage following simple inversion of the appendix with the ordinary purse-string suture.

To avoid this possibility I have devised the following technic: After tying off the meso-appendix with one or two ligatures, as may be indicated, a double-needled fine chromic catgut suture is passed through the mesenteric border of the appendix at its base, taking a good bite through the muscular coat. This is tied. Then proceed with one needle to introduce the usual purse string suture to the side opposite the mesenteric attachment; or, in other words, half way around the appendix. Then do likewise with the second needle, when one is ready to invert and tie after using clamp and cautery. The second purse-string suture is inserted as usual.

I am well aware that some surgeons prefer linen or silk to catgut, but I can not feel justified in using nonabsorbable suture material for ordinary appendix work, until I shall have been convinced of a single accident occurring by reason of the inefficiency of absorable suture material. That silk or linen may cause irritation or suppuration later can be corroborated by every surgeon of experience, who can readily recall numerous fishing excursions for the recovery of infected stitches.

RUPTURE OF URINARY BLADDER FOLLOWING FORCEPS DELIVERY.

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The peculiar circumstances attending the following case make it of more than passing interest, and worthy of report.

History.—Mrs. C. R., Italian, aged 40; husband living; vi-para; no miscarriages; instrumental delivery with last child, Oct. 23, 1907. Last menstrual period about nine months ago. No definite history of previous menstruation obtainable. Family history negative.

It was very difficult to elicit a definite history of the development of the trouble. Her family physician claimed that he was called to attend the woman in labor on the afternoon of Oct. 23, 1907. Her pains continued strong up to about 4 p. m., when they suddenly ceased. As no further progress seemed to be made, he examined the woman and found the membranes ruptured, and "one of the child's arms over the head." This arm he attempted to replace, and then applied forceps. No mention was made as to the dilatation of the os uteri. After working very hard with the forceps, the doctor finally succeeded, toward morning, in extracting a large baby. He reported the child stillborn.

There was considerable bleeding after delivery. The woman passed no urine, and had no movement of the bowels afterward. Her doctor tried to pass a catheter, but claimed he could obtain only a few drops of urine. Various cathartics and enemas failed to relieve the bowels. Next day her abdomen became distended and tender. Vomiting began and was persistent. She had some chills and a rise of temperature. Her physician said he thought she had an acute obstruction of the bowels and so sent her to the hospital.

Patient was admitted to the Charity Hospital at 4 p. m. Oct. 25, 1907, complaining of generalized abdominal pain, especially tender on pressure, marked distension of abdomen; persistent vomiting (greenish-yellow, sour smelling vomitus); constipated for four days; no urine passed for over four days; chills and fever.

Examination.—When the woman arrived at the hospital, it was thought, from the history and distension of the lower abdomen, that the bladder was greatly distended with urine. The woman claimed she had passed no urine for over four days. She was very anemic; tongue dry and heavily coated; temperature 101; pulse 120. There was a general distension of the abdomen, with a trifle more fulness over the lower part and in the flanks. Abdomen throughout was extremely tender. On percussion there was a semilunar area of dulness extending about three fingers' breadth above the symphysis pubes and out toward the flanks. Relative dulness extended almost above the umbilicus. The fundus of the uterus could not be felt on account of the great distension and tenderness. The vaginal outlet was relaxed and there was a recent tear through the sphincter ani. The vulva was contused and edematous. Vagina roomy, abraided, contused and edematous. There was a laceration in the vault, extending about the base of the bladder, and the neck of the bladder felt as though it had been torn loose and retracted. There was also present a bilateral laceration of the cervix, extending on the right side up into the broad ligament and on the left to the vaginal vault.

Acting on the assumption that there was a full and distended bladder, numerous attempts were made to pass catheters of various kinds and sizes. With every attempt the catheter seemed to slip into some false passage. Finally, with a small glass catheter directed backward and upward, and a finger in the vagina as a guide, it was felt that the tip of the catheter was separated from the finger by only a very thin mucous membrane. The catheter, however, was passed in completely, but only a few drops of bloody, ammoniacal urine were withdrawn. A suprapubic puncture was then made in the median line, about one inch above the symphysis. On manipulating the trochar point it seemed to grate on a firm irregular organ. When the trochar was withdrawn a few drops of bloody, ammoniacal urine came from the cannula. Thinking that the bladder had become detached at the neck, and was pushed up by the enlarged uterus, another puncture was made about an inch and a half above the former one. The trochar felt as though it first entered a hollow viscus, and then encountered the firm body as before. On withdrawing the trochar about half an ounce of bloody ammoniacal urine flowed from the cannula. When further withdrawn, some yellowish-green fluid fecal matter came out. There was then little doubt that a loop of gut had also been punctured.

Operation.—Dr. C. A. Hamann was called in to see the case, and after careful examination, advised immediate operation. Operation at 8:30 p. m. by Dr. Hamann; ether anesthesia. Patient had a chill fifteen minutes before going under the ether. A median incision, about three inches long, was made above the symphysis. On opening into the abdomen the bladder was found to be ruptured. Difficulty was experienced in finding the posterior bladder wall. It was found to be torn off above the neck, and retracted from the urethra, with only a very thin mucous membrane between neck of bladder and vaginal vault. There was bloody, ammoniacal urine in the lower abdomen and in the flanks. An acute generalized peritonitis was evident. The uterus was firm and the fundus reached almost to the umbilicus. A loop of small intestine was found adherent to the upper anterior surface of the uterus, which showed a puncture wound of the trochar, with a small amount of fecal matter about the puncture. The puncture wound of the bowel was closed with a fine silk Lembert stitch. A soft rubber catheter, guided with two fingers in the vagina, was passed up through the urethra and brought into the lower posterior part of the ruptured bladder for drainage. No attempt was made to repair the bladder wall itself. Several iodoform gauze strips were left in the bladder and passed out through the abdominal incision. The wound was closed with through-and-through silkworm gut sutures.

Just as the operation was nearing completion, the woman collapsed on the table. The pulse became very rapid, then much slower, and finally imperceptible. Breathing ceased and cyanosis ensued. The pupils were dilated and rigid. All efforts failed to restore the patient. Operation lasted about thirty minutes, and five ounces of ether were used.

Traumatic Neurosis.—W. H. Axrell, in *Northwest Medicine*, states that the symptoms of a traumatic neurosis are usually those of neurasthenia or hysteria. There is loss of energy, with listlessness, slow mentality, simulation of the particular injury alleged to have been received, and indefinitely located pains.

AN OBSTETRIC ANOMALY: AN EXTRA FONTANELLE.

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AYER, MASS.

As I have been unable to find any mention of this anomaly in the literature, I think that the following report may be of interest to general practitioners:

Patient.—Baby W., delivered at term by forceps applied to the head at the superior strait. Position, O. L. A.

Labor.—Examinations during labor seemed to show some failure of the flexion of the head, and as the pelvis was of normal size and shape, the child apparently not large, and the pains seemingly of sufficient strength, the failure of progress was laid to imperfect flexion. Several attempts to flex the head without anesthesia seemed ineffectual, as the anterior fontanelle apparently still persisted within easy reach of the examining hand. An attempt to flex the head under anesthesia just before applying forceps was also ineffectual. Delivery was moderately difficult, and at the expense of a perineal laceration requiring four stitches, one to occlude a large anomalous artery.

Description of Child.—The baby weighed 7¼ pounds and was normally developed except as follows: Both anterior and posterior fontanelles were in their usual position and of the usual shape. Between the two, in the course of the sagittal suture, but nearer the sinciput than the occiput was a gap between the parietal bones, of the same shape as the anterior fontanelle, and only slightly smaller. Two fairly well-marked ridges of bone ran from the lateral corners of this, feeling much as the sutures feel when the bones are overlapped. This at once explained the apparent persistence of the anterior fontanelle within easy reach of the examining hand.

Such a condition makes an exact diagnosis of presentation and degree of flexion of the head exceedingly difficult.

SUDDEN DEATH FOLLOWING USE OF DIPHTHERIA ANTITOXIN.

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NEW MARTINSVILLE, W. VA.

After reading in THE JOURNAL Jan. 11, 1908, an account of Dr. S. N. Wiley's unfortunate experience with antitoxin, I wish to report an experience almost identical with Dr. Wiley's:

Patient.—In the evening of Aug. 29, 1907, Mrs. W. brought her son Frank, aged 10, to my office, saying she was afraid his throat was sore. I examined him and found his condition as follows:

Examination.—Temperature 102, pulse 110, respiration 18. The throat was very red and much inflamed, but there was no diptheritic membrane. There being a slight epidemic of diphtheria in the neighborhood, I did not make a positive diagnosis, but told the mother that it was a case that would bear watching and that I was afraid of diphtheria. I gave the boy 4 grains of calomel and a simple throat wash.

Course of Disease.—Next morning at 11 o'clock I was called to see the boy. The cathartic had acted, but temperature was still 102 and pulse 110; a small amount of diphtheritic membrane had made its appearance on the pharynx. I immediately made a positive diagnosis of diphtheria of a mild grade, which was confirmed at that time by another physician whom I called in as he was passing. The boy had been up all forenoon playing and was apparently very strong. He was an extremely well-developed little fellow, and had no organic heart trouble, nor did there seem to be any particular weakness of the heart. After cleansing the site of injection, with the consent of the parents and the endorsement of the other physician, I gave 4,000 units of antitoxin, which was stamped "good until February, 1908." I introduced the needle carefully below the shoulderblade, and slowly injected the entire amount into the back of the patient; he was lying on his face and did not even cry out when the needle was introduced. I had just turned away from him and laid the syringe on the table when he gave a loud cry of distress and sat up in the bed, catching at his throat with both hands, also giving a choking cough or two. I noticed a look of intense anxiety on his face with pallor around the lips. I asked his mother if she had heard him cough in that manner before and she said she had not. He cried out that his head hurt him and that he could not breathe. All this time he was clutching at his throat. I tried to get him to swallow some whisky and water, but it seemed to choke him as though the muscles were paralyzed; in a few seconds his lips, face, ears and neck were cyanosed, the pupils were dilated and eyes staring; froth was also running from the mouth, and the boy occasionally gave a harsh brassy cough, together with a peculiar cry. He had a convulsion and ceased to breathe, although, as in Dr. Wiley's case, the heart continued to beat long after voluntary respiration had ceased. I gave him stimulants hypodermatically, and also used artificial respiration until life was extinct. The time of his death was not over five or six minutes from the time of giving the antitoxin.

I have used antitoxin of different makes a number of times and have always had excellent results, excepting in this case, and do not understand this experience. I am sure I do not want any more experiences of a like nature. I have all confidence in antitoxin and have used it since with uniform good results; but I should like to know the cause of death in this case.

PHENOL (CARBOLIC ACID) GANGRENE.

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MARYSVILLE, CAL.

Fred M., aged 25, had the end of his right thumb slightly crushed in the cogs of a machine at which he was working. The accident occurred early in the morning of Dec. 28, 1907, and the injured thumb was immediately dressed by another employé, who saturated a piece of cotton with tincture of arnica, containing an unknown quantity of carbolic acid. The dressing was applied as far as the base of the thumb, and was kept moist with the solution until December 30, at 10 a. m., at which time I was called.

At this time the man said the thumb was absolutely insensitive as far as its base, and on examination it was found to present the typical picture of gangrene, with a well-defined line of demarcation. There had been considerable bleeding during the time the compress was on. The thumb was amputated about three-fourths of an inch above the metacarpophalangeal joint and the wound healed by first intention.

The solution of carbolic acid was kept on hand together with other emergency materials by the company employing the man. It would seem that where such emergency supplies are kept on hand, the dispenser should be somewhat familiar with the properties of the materials he is using, and especially with those of a dangerous substance like carbolic acid.

Cancer in Children.—P. W. Phillip publishes a monograph on this subject in the *Zeitschr. f. Krebsforschung*, v, No. 3, page 326. He has collected from the literature 390 cases of assumed cancer in children, and classifies them according to location, etc. One feature of the material is the almost complete absence of cancer of the uterus and breast among the girls affected. Epithelioma is also extremely rare. Most of the cases of cancer developed between 9 and 15, during the age of puberty, and in the digestive tract, the ovaries or skin. The cancers observed in children seem to sustain the theory of irritation as a factor in the origin of cancer, rather than the embryonal theory. The cancer was in the intestines in 29 per cent. of the cases.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, FEBRUARY 8, 1908.

OUR FOREFATHERS' KNOWLEDGE.

A striking feature of the "History of the Medical Society of the State of New York," which has been appearing serially in the *New York State Journal of Medicine*, and is now published in book form, is the fact that a great amount of medical knowledge which we are prone to think of as originating in recent years was possessed by our forbears in medicine of the early part of the nineteenth century. In the chapter on the prize essays of the society attention is called to the fact that of the first seven essays not one is without great interest at the present time. One would be apt to think that medical matters discussed almost a century ago would have very little practical significance for the physician of the present. We are prone to assume that there has been so much development in medicine that we have been set far beyond the thoughts of that earlier time, especially in matters of treatment and knowledge of the cause of disease.

This proves not to be the case, however; on the contrary, many of the subjects discussed are now of the most intense interest, and are frequently brought up in medical society meetings of the present day. The first essay was a dissertation on the "Remote and Proximate Causes of Phthisis Pulmonalis." We might expect that at least in this the notions would be old-fashioned. The author argues, however, that consumption is not due to cold, but is due to dust-laden air of various kinds. In an editorial in THE JOURNAL[1] last year attention was directed to the high death rate from tuberculosis in the metal polishing trades. This same increased mortality was noted at the beginning of the nineteenth century. The remark is made that people who work in the needle-grinding and scythe-grinding industries scarcely ever survive their fortieth year, and that their special affection of the lungs, which is accompanied by spitting of blood, with decline in flesh and strength, was known as "grinders' rot." On the other hand, boatmen, watermen, sailors and gardeners are said to be immune to the disease, and domestic animals which live outside present the same immunity, while the cow is reported to be particularly subject to consumption. The whole tenor of this article would seem to stamp it as belonging to the beginning of the twentieth and not to the beginning of the nineteenth century.

1. THE JOURNAL A. M. A., Jan. 26, 1907, p. 331.

The second essay had for its subject the "Treatment of Typhus Fever." At that time typhus and typhoid fevers had not been differentiated. In spite of this lack of knowledge, that would seem to promise such a dearth of suggestiveness for present day therapeutics, the essay is very interesting, especially in its references to cold water treatment. The writer quotes with approval Dr. Currie's experiences (in Edinburgh) with cold water and cold air. Definite rules for the use of cold water in fevers were given; it was not to be used either externally or internally in the cold phase of a paroxysm of fever. It was also never to be used when the patient was in a perspiration. When the surface of the skin was hot and dry, however, cold water was advised in any sort of fever, provided patients were not in an exhausted condition. Though it is usually said that the thermometer came into use much later than this time, this essayist discusses the Fahrenheit temperatures of the patients.

The third essay was on the "Therapeutic Uses of Iodin." We have enthusiastic advocates of the wonderful value of iodin to-day, but none of them is any more enthusiastic than was this writer of the first quarter of the nineteenth century. He recommended beginning with small doses, but considered that the dose should be increased up to physiologic tolerance. He distinguished, however, between physiologic and poisonous effects. Iodin internally and externally was recommended in all glandular affections and in most of the conditions in which we now use either iodin itself or the iodid of potassium, or sodium, for their so-called alterative effect. The essayist mentions a number of cases in which enormous doses of the tincture of iodin and of the iodid of potassium were taken daily without bad effect. He does not recommend these huge doses, however, and in general, in reading his essay, one would be much more apt to think the writer a rather conservative professor at a postgraduate school of the last decade, and not a simple physician of almost a century ago.

Probably the most interesting of the essays is the fifth. Its title is "The Influence of Trades, Professions and Occupations in the United States on the Production of Disease." The author discusses the question of overcrowding in the tenement house districts of New York City quite in the same terms as they would be discussed by a sanitarian of the present. He asks: "Can we expect men who live thus to be orderly and sober, or women to be cleanly and domestic? In such situations during the summer months diarrhea and dysentery are rife, and among children fatal. Scrofula in some of its protean forms is frequently met with, and they form the lurking places where smallpox, measles and scarlet fever lie covered under the ashes, or when circumstances are favorable blaze up into sudden fury."

Perhaps the most striking portion of this article on occupation and disease consists of a review of the manufacture and consumption of quack medicines, and it is interesting to note that the writer was evidently per-

suaded, as we are now, that the newspaper press of the country was responsible for the conditions. His expressions are worth recalling because they so completely anticipate the most modern views in this matter. He says: "There is an evil which has of late years become of excessive magnitude, and which is daily increasing —the consumption of quack medicines. Aided by the immense circulation of a cheap press, many of these nostrums have obtained a sale that exceeds belief. Few patients among the lower classes now apply to a physician, who have not previously aggravated their complaints by swallowing members of these pretended species, and a late resident of the city hospital has informed me that he has met with many cases of derangement and irritation of the mucous membrane of the stomach and bowels, caused solely by the drastic articles which enter into their composition. Formed in most instances of irritating ingredients, and directed to be taken in immense doses, and as infallible remedies in all cases, the mischief which they do is incalculable, and unless some stop be put to the evil by law or by an enlightened public opinion, it will soon claim an unenviable pre-eminence as a cause of public ill health." *This was written in 1836!*

Those who are inclined to think that it is only in recent times that American medical men have made thoughtful advances in science, or have endeavored to correct professional and other medical abuses do not know that the early history of medicine in this country is full of the efforts of earnest men to bring about progress in medicine and the uplift of professional dignity. Nothing is so chastening to the self-sufficient complacency of the present generation with regard to its medical progress as to learn how much was done and known in the past, and how little of real advance there is in certain phases of medicine. It is a good thing to hark back occasionally, for to do so will make us more conservative and less ready to jump to hasty conclusions regarding the knowledge of the past and the present.

GANGOSA.

In Dr. Senn's[1] interesting letter from La Paz, Bolivia, he speaks of an "unknown disease" endemic in certain parts of the country, three cases of which he saw in one hospital. He describes the condition as "a granulomatous process which begins at the mucous or cutaneous margin of the lip—in preference the upper lip." The process spreads to the alæ of the nose and the septum, and finally spots appear on the hard and soft palates. Although Dr. Senn was probably correct in calling the condition an "unknown disease," it seems likely from the description that it is the tropical disease gangosa, to which attention has recently been directed by Leys, Mink and McLean, Stitt and other surgeons of the United States Army and Navy. The description given by Dr. Senn tallies well with their descriptions of gangosa. Fordyce[2] described the disease and demonstrated it in a native of the Isthmus of Panama, and Leys[3] has shown that it exists in various parts of the West Indies.

The disease is known to have existed in Guam, where it is very prevalent, for at least a hundred and fifty years, and was fully described, as it occurs there, by Mink and McLean[4] in 1906. These authors state that the disease is "characterized by a destructive ulceration, usually beginning on the soft palate, pillars or uvula, and extending by continuity to the hard palate and nasal cavity, larynx, and even to the face. Active ulceration is followed, after a variable period, by cicatrization or chronic ulceration. Mutilation always results. Constitutional symptoms are either slight or absent." The disease bears some resemblance to leprosy, syphilis and tuberculosis localized in these parts. It would seem, however, that the resemblances are not very close, and, as its describers show, it can be satisfactorily distinguished from these various diseases. Fordyce, who has studied the pathologic histology of his Panama case and of material from two cases in Guam, the three cases agreeing entirely in their histology, was able to differentiate the disease by the histologic findings from blastomycosis, actinomycosis, rhinoscleroma, leprosy, lupus and other granulomata. Although no microorganism has been found, there is every reason to believe that gangosa is a microbic disease. In Guam, where the disease was first studied and where syphilis is said not to exist, gangosa is exceedingly common, affecting from 1.8 to 2.2 per cent. of the population, an enormous proportion. Musgrave and Marshall have found it in the Philippines, and Leys has shown that it is highly probable the disease exists in British Guiana, Jamaica and other parts of the West Indies. It is distributed throughout the Ladrone and Caroline Islands. The disease is apparently spread by contact. It diminished in Guam under segregation by the Spaniards and has recently increased greatly there since segregation has been neglected by the United States. It occurs in the lowest classes of the native population and was thought to be confined to them. Stitt, however, found one case in a white recruit from the United States, who in Guam had associated on terms of intimacy with native families in which the disease existed.

Gangosa is an interesting and practically important addition to our list of tropical diseases and one concerning which we are likely to hear a good deal more. For our scientific knowledge of it we are indebted chiefly to the surgeons of the United States Navy mentioned above. Their careful scientific reports of the disease as it exists in Guam are illustrative of the good work which is being done by the government medical corps in our newly acquired colonies.

1. THE JOURNAL A. M. A., Jan. 11, 1908, p. 116.

2. Jour. Cut. Dis., January, 1906.
3. Jour. Trop. Med., Feb. 15, 1906.
4. THE JOURNAL A. M. A., Oct. 13, 1906, p. 1166. Supplementary paper, Jour. Cut. Dis., November, 1907.

HYPERSUSCEPTIBILITY TO SERUM IN HUMAN BEINGS.

After the injection of diphtheria antitoxin it sometimes, although fortunately rarely, happens that sudden death occurs. Three examples have been reported recently in The Journal, one appearing in this issue.[1] Various general explanations have been advanced of such occurrences, among others the so-called status lymphaticus. If this state or constitution were present always in these cases, then we would be forced to assign to it an essential rôle in the unfortunate result, even though we would be in ignorance as to the exact mechanism whereby death was caused. The status lymphaticus occurs almost exclusively in children and young adults, while death has resulted after the injection of diphtheria antitoxin in persons over 30 and also in cases in which postmortem examination showed no hyperplasia of the lymphatic tissues. Consequently, these deaths are not explained satisfactorily on the score of the lymphatic constitution.

There may be a striking similarity between the symptoms in these cases and those presented by animals receiving alien serum while in the so-called anaphylactic state, that is to say, sensitized or rendered susceptible by a previous injection of the serum. Thus in Wiley's case the patient, soon after the injection, complained of terrible itching and burning of the face and scalp and scratched vigorously with both hands; the itching spread all over the body, respiration became labored, the lips, face, and neck became swollen and dark red in color, and paralysis seemed to have occurred. The man then had a slight convulsion, after which he ceased to breathe, the heart continuing to beat for some time. In properly sensitized guinea-pigs, injections of horse serum are followed in five or ten minutes by respiratory embarrassment, by scratching at the mouth and elsewhere, followed soon by paralysis, convulsions and death. These symptoms are said by Rosenau and Anderson[2] to be very characteristic. At this point it is well to note that in sensitized guinea-pigs profound disturbances may follow injections of normal horse serum, as well as of antidiphtheria serum—the antitoxin in no way being the responsible element.

So far as we know, healthy animals, like rabbits and guinea-pigs, may be injected with large quantities of horse serum without serious inconvenience, provided the animals have not been rendered hypersusceptible, or sensitized, by means of previous introduction of horse serum. If we assume that human beings in rare instances are hypersusceptible to horse serum, then the question arises: How is this hypersusceptibility produced? Is it the result of a previous introduction of horse proteid and if so by what route? Here are two possibilities to be considered. Repeated injections of horse serum in human beings is now not at all infrequent, and in many such cases there occurs, according to von Pirquet and Schick in their work on "Serum Disease," either a so-called "immediate" or an "accelerated" reaction, consisting of fever, urticaria, and other symptoms, but so far as we know no instance of sudden death has followed as yet on repeated injections of therapeutic serum in man. It well may be, then, that man fortunately is not sensitized in the same way as guinea-pigs are, but it is also barely possible that the amounts injected and the intervals between the injections have not been suitable to produce the maximum toxic effect.[3] The other possibility is that man, under exceptional circumstances, may be sensitized by way of the digestive tract. Guinea-pigs are readily sensitized in this way. Horse meat is sometimes used for human food, both wittingly and unwittingly, and it is thus possible that hypersusceptibility may be created in this way. The sudden and sometimes serious symptoms that occasionally follow the consumption of certain articles, e. g., sea food, nuts, strawberries, etc., may be other examples of hypersusceptibility to proteids on the part of man which we hitherto have been content to ascribe to "idiosyncrasy." Finally, it may be well merely to suggest that the sensitizing principle might come from some other source than the toxic principle, apparently a remote possibility it is true, in view of the uniformly strict specificness so far observed in the reactions of anaphylaxis.

The question of immediate concern to the physician is what can be done to avoid all the serious consequences of serum injections, even though they are exceptional indeed, without any undue curtailment of serum therapy. In the first place, we believe that it is prudent at present not to use antisera of doubtful value, e. g., antistreptococcus serum, or antipneumococcus serum, except perhaps in special and desperate cases. In the next place, special care should be exercised in the case of persons with certain asthmatic tendencies because in some of the fatal instances we read that such conditions have been noted, as, for example, in Wiley's case, in which the patient "from childhood never could be about horses without suffering from symptoms of asthma." Finally efforts should be made by investigations looking to the removal from therapeutic sera, especially antidiphtheria, of the toxic principle without any lessening of their antitoxic and therapeutic value.

1. One death reported by H. F. Gillette, Cuba, N. Y., The Journal, January 4, p. 40; one by S. N. Wiley, Norristown, Pa., The Journal, January 11, p. 137, and one by E. L. Boone, New Martinsville, W. Va., in this issue of The Journal, p. 453.
2. Jour. Infect. Dis., 1908, v, 85.
3. For a more elaborate discussion of the bearings of available facts see the review of anaphylaxis, by Rosenau and Anderson, Jour. Infect. Diseases, 1908, v, 85.

THE POSSIBILITIES OF COUNTY SOCIETY WORK.

The address of Dr. Floyd Crandall in this issue[1] demonstrates, in the example of the Medical Society of the County of New York, what can be done, under the persevering efforts of a few devoted men, by the county organizations toward freeing their jurisdictions from unlicensed, irregular and disreputable practitioners of medicine; from incompetent and life-destroying mid-

1. Page 417

wifery; from the exploitation of the medical profession by commercial companies; from the habit induction and the disease neurosis sedulously and callously fostered by "patent medicine" mongers; and, lastly, in settling the law on a firm basis by obtaining final decisions on obscure points. St. Louis also has been following in the footsteps of New York with commendable energy and considerable success; and some efforts tending in a like direction have been made by Kansas City, Los Angeles and one or two other places.

But these efforts and successful achievements serve only to throw into greater prominence the indifference that characterizes the medical profession in many of our large cities, where some or all of these evils are allowed to flourish without any serious attempt being made to suppress them. It is time that we arouse ourselves to a more general performance of our public duties, over and above those due from the individual physician to the individual patient. In preventive medicine we assume the protection of the public health and welfare against the onslaughts of disease, by recognizing and eliminating, or at least minimizing to the utmost extent of our power, not only the direct causative agents of disease, but those removable indirect influences that, by undermining the natural defensive agencies, contribute to successful attacks by the disease causes themselves. This protection of the public it becomes our duty to exercise in virtue of the fact that the public, from lack of knowledge, is as yet incompetent to protect itself. In like manner the evils of quackery must be combated by the profession for the same reason; and more particularly is this the case when such quackery shelters itself within our ranks, thus rendering itself doubly dangerous and bringing discredit on the profession. It is true that the most potent influence we can exercise is the enlightenment of the public; but also it is true that practical object lessons are far more effective than any amount of mere didactic lecturing.

Our efforts to enlighten the public regarding the evils of quackery in general will be more effective, and its faith in our honesty of purpose more abiding, in proportion as we cease to tolerate—whether from indifference or moral cowardice or both—a treacherous use of our flag by the most unscrupulous of enemies in disguise. What can be done in New York, St. Louis and elsewhere can be done also—in varying degree, it is true, according to local conditions—in every community throughout the land.

County societies constitute the army that must wage the warfare; but on competent leadership must depend the efficiency, skill and success with which it is waged. Let the members of those organizations that have as yet made no move in this direction study carefully Dr. Crandall's address; then, having learned the nature and position of the enemy, let them gauge his strength and under chosen leadership advance to the attack, applying, according to the local exigencies of their respective battlefields, the tactical principles so well defined by Dr. Crandall.

THE STRUGGLE TO RECLAIM STATE INSTITUTIONS FROM POLITICAL EXPLOITATION.

The malicious influence of cheap bread-and-butter politics on public institutions is illustrated by recent events in Illinois. At the beginning of his administration the present governor appointed an exceptionally strong Board of Charities and gave other unmistakable evidences of his intention to place the state hospitals for insane and similar institutions on a high plane. The functions of the Board of Charities are to investigate into the management and condition of the state charitable and reformatory institutions and to report their results with recommendations to the governor; it has no further executive powers than those necessary to do this work, and it has no punitive powers whatsoever.

As the result of a vigorous and searching investigation of the institutions under its charge, the present board made a series of radical recommendations to the governor which resulted in the appointment of several new superintendents, in the establishment of a state psychopathic institute, and in various changes for the good of the service in general. It was found best in some cases to go outside the state in order to secure strong men of adequate special training. In practically all institutions new buildings and improvements of different kinds were found necessary, an epileptic farm colony seemed especially desirable, and proper recommendations and appeals were made to the legislature for the needed appropriations. The legislature, however, failed to set aside the money required for a thorough rehabilitation, and in some of the older and overcrowded institutions great difficulties still exist in the way of satisfactory administration, as, for instance, in the Home for Feeble-Minded Children at Lincoln, on which has been superimposed the care also of many hundred adult epileptics, a burden that the home in no way is fitted to carry.

Arising out of a fatal injury to one of the inmates in this home a public legislative inquiry, in charge of a committee of legislators no one of whom has any expert knowledge of institutional management, is going on into the conditions in this institution. As a result the newspapers are full of "asylum horrors," among which are classed autopsies and museum specimens. In our characteristic fashion, every one who has anything to tell is invited to tell it in public with full details. Institution gossips are having the time of their lives and the discharged employé is getting his revenge. The committee has not yet reported, so that its findings are not available for discussion, but so far its methods of investigation surely would tend to make the conscientious search for the precise truth an exceedingly difficult one.

In the meanwhile, strong effort naturally is made, for political ends, to magnify shortcomings, real and otherwise, and to place all blame for everything wrong, inherited and acquired, on the present administration. Hence the situation has become not only discreditable but harmful. The charitable institutions of the state are made subservient to practical politics and the real problem in Illinois, as well as in many other states, is how to make their institutions safe from politicians. To this end the present Board of Charities in Illinois has contributed manifestly sincere and successful efforts to secure reforms and improvements and unquestioned active interest in the progressive development of state institutions.

THE ROLE OF BARIUM IN LOCO POISONING.

"Loco" poisoning, which has long caused such great losses among the animals on the ranges of most of our western states has hitherto baffled all attempts at explanation. Of the numerous suggestions made, the one which attributes the condition to the eating of poisonous plants (the "loco" weeds, especially *Astragalus mollissimus* and *Oxytropis lamberti*) has probably been the one most generally accepted, but attempts to isolate a poison from these plants have been uniformly unsuccessful. A. C. Crawford, a pharmacologist in the Bureau of Plant Industry, has made the most interesting and important discovery[1] that the toxic substances of these plants are inorganic salts, for the most part of barium. Only those "loco" plants containing barium produce the symptoms and Crawford has been able to produce in animals symptoms closely similar to those of "loco" by feeding barium salts. These results are of great interest to the medical profession for they afford another illustration of the evil effects which may follow the long continued use of minute quantities of a poison. It is already recognized that barium is a dangerous poison to man, and a few cases of chronic poisoning have been reported; but before the announcement of this brilliant discovery of Crawford, probably no one would have suspected that this substance could produce such fatal and serious effects. The publication of Crawford's complete paper, which promises to be one of the most important contributions made to pharmacology in the United States, will be awaited with great interest.

VITAL STATISTICS BILL MAY FAIL IN VIRGINIA.

Reports just received from Virginia indicate that the vital statistics bill, now before the legislature, will probably fail of passage. The bill is drawn along the lines recommended by the census department of the national government, and endorsed by the Conference on Medical Legislation of the American Medical Association. It is also in harmony with the recommendations of the American Public Health Association, the American Statistical Association and other competent scientific bodies, yet, according to the statement in the January *Bulletin of the Virginia Board of Health*, this bill can not become a law, on account of the opposition of the undertakers throughout the state. The *Bulletin* says: "Why the undertakers should make this attack on a bill which promises so much for preventive medicine is beyond comprehension. The answer is simply and solely because it may give then a little trouble to file the certificate of death with the registrar before burial. This bill was printed and scattered all over the state Dec. 1, 1907, and was sent to every undertaker in the state. Criticisms and suggestions were invited. None was received of any kind whatsoever save from one individual, a city undertaker, whom the bill does not affect." This incident is a fitting illustration of the way in which needed and beneficial legislation is opposed on account of business interests and for selfish reasons. The need of proper registration of vital statistics can not be denied. The government, to-day, which does not preserve records of births, deaths and disease is at least fifty years behind the times. No European nation, however small or insignificant, would think of doing without vital statistics and proper registration laws. The "Old Dominion" is one of the earliest settled and longest inhabited regions in America, and should long ago have provided for proper registration of the births and deaths of its citizens. Yet in Virginia, as in Iowa, a vital statistics bill has failed to pass because the undertakers of the state object to taking the trouble to fill out report blanks.

1. Laboratory Work on Loco Weed Investigations, U. S. Department of Agriculture, Bureau of Plant Industry, Bull. 121, Part III, 1908.

THE OCCURRENCE OF BROMIN IN ANIMAL TISSUES.

The halogen elements, fluorin, chlorin, bromin and iodin, are almost invariably found occurring together in Nature; where one of these elements is detected the others also may usually be found. As the classical example we have sea water, rich especially in chlorin, bromin and iodin, and the same content is common to many mineral springs. Chlorin and fluorin have long been known to be present in the animal body, but it is only twelve years since Baumann first reported the occurrence of iodin as a constant constituent of the thyroid. Justus, who has maintained that iodin is present in all tissues of the body, now makes a further report[1] to the effect that bromin is likewise constantly present throughout the animal body. The amount of this element that can be demonstrated in the various tissues is, according to Justus, much larger than is the case with iodin, being reckoned as milligrams per hundred grams of tissue where iodin occurs only in hundredth parts of milligrams. Differing from iodin, the largest amounts were found in the adrenal bodies, although the thyroid follows close, while the smallest amounts were obtained from the blood. If bromids are given to animals, the greatest amount of bromin accumulates in the adrenals and thyroid, which seem to be the natural storehouses of this element, and in the brain, where its physiologic action is chiefly observed. These observations of Justus are striking, but it is hard to understand how such an element as bromin

1. Virchow's Archiv., 1907, cxc, 524.

could have been overlooked until this time, if, as he claims, it exists in all tissues in amounts ranging from eleven to forty-five milligrams in each one hundred grams of tissue; consequently we shall await with interest confirmation of this important observation.

PELLAGRA IN SOUTH CAROLINA.

It is not a particularly welcome discovery to find a new and serious disease endemic in a region hitherto supposed to be free from it. The report of Dr. Searcy of the discovery of pellagra in the Mount Vernon Insane Asylum in Alabama[1] is now supplemented by a similar report by the medical officers of the State Hospital for the Insane at Columbia, S. C., with detailed clinical histories of a number of cases there observed. They conclude that a disease of this type occurs in that state and that the characteristic form of mental disorder it produces is also observed. Since it is estimated that in southern Europe only about 10 per cent of the victims of the disease present these mental symptoms the occurrence of a number of cases in the asylum would indicate the existence of a much larger number in the general community. It is somewhat remarkable that, considering the large part taken by maize in the diet of the inhabitants of large sections of this country, the disorder has not been recognized before. The most natural way to acount for it, perhaps, is to assume that the particular form of bacterial or fungoid infection is a comparatively recent arrival from southern Europe, Mexico or Central America. In every case in which it has been noticed, it appears to have been connected with the ingestion of damaged corn meal. The fact that hookworm disease, now known to be endemic in large sections of the Gulf states, was a comparatively recent discovery in that region, suggests an unpleasant possibility that pellagra may be found more prevalent than has yet been demonstrated. The coincidence of the two disorders in some of the South Carolina cases is of interest, and, as the report says, calls for further inquiry.

Medical News

CALIFORNIA.

Fund for Special Sanitation.—At a joint meeting of the supervisors on Finance and on Hospitals and on Health, January 16, it was decided to allow the San Francisco Board of Health $11,500 as an appropriation from the city toward the expense of the special sanitation campaign.

Assessed by Law.—In the case of Mr. and Mrs. McKinzie against Dr. J. T. Stewart, Los Angeles, in which damages of $50,000 was claimed on account of alleged malpractice, the jury is said to have found for the plaintiff and awarded damages of $5,000.——K. Tokunaga, San Jose, is said to have pleaded guilty to the charge of practicing medicine without a license, January 18, and to have been fined $100.

May Absorb Medical College.—It seems probable that the long-considered question of the consolidation of the Leland Stanford University and Cooper Medical College, San Francisco, may be accomplished. This consolidation would give the university a thoroughly equipped medical and surgery department and a hospital, and would give the college a share of the Stanford income, which would enable it to carry on a large scale the original plans of the founder, Dr. Levi Cooper Lane.

Communicable Diseases.—A new health ordinance has been prepared for Pomona, which provides that physicians, osteopaths and householders shall report all cases of smallpox, diphtheria, scarlet fever, typhoid fever, measles, tuberculosis, chickenpox, whooping cough and all other infectious diseases, and shall observe proper quarantine.——An epidemic of influenza is said to be raging in Weed.——The Board of Health of Oroville has decided to close schools and other places of public gathering on account of the prevalence of diphtheria.——A rigid quarantine is being enforced at Red Bluffs, on account of the presence of two cases of smallpox.——Several cases of smallpox are said to have developed in Butte City.——The steamer *Mongolia*, from Honolulu, arrived in San Francisco, January 18, and was held in quarantine on account of smallpox.——Smallpox is reported on the increase in San José.

Hospital Notes.—Dr. J. S. Bartlett, Pasadena, has presented the Pasadena Hospital Association with $2,000, and Mrs. William C. Baker has given $1,000 to the institution for the establishment of a chemical laboratory. Dr. Edith Claypole has offered to take charge of the laboratory without expense to the institution.——A new hospital is planned to be built just west and adjoining Gilroy. The site has been donated by Henry Miller, who will assume all expenses of the construction of the hospital.——The Rideout Memorial Hospital, Marysville, has been incorporated to receive and hold the gift of the Rideout residence in that city for hospital purposes, and to transact business in connection with the institution.——Plans are being prepared for the Pomona Valley Hospital, which is to cost from $35,000 to $50,000. The new building is to be in mission style, two stories in height. It will contain 35 private rooms, in addition to several small wards.

The Plague Situation.—The state medical society is well launched on its antituberculosis campaign, through a committee appointed for the purpose, of which the president of the society is chairman. At a meeting held January 18, 60 representatives of mercantile and civil life were present, the situation was thoroughly gone over, and the necessity for active cooperation impressed on those present. A committee, consisting of the mayor, president of the county medical society and the president of the Medical Society of the State of California has been appointed to name a larger committee to cooperate with it to carry out the work, which was begun in October, toward the extermination of rats. The following figures show the steady increase of the epidemic among rodents: In September, of 1,188 rats examined, .75 were found to be infected; In October, of 2,865 examined, .80 were infected; in November, of 3,626 examined, .94 were infected; in December, of 4,191 examined, 1.14 were infected, and for the first 18 days of January, of 3,418 examined, 1.31 were infected.——A staff correspondent, under date of February 3, telegraphs that the plague situation remains about the same, although the percentage of infected rats is slightly increasing, and is now more than 1½ per cent. The citizens' committee of twenty-five, appointed by the mayor as the result of an urgent request of the committee appointed by the Medical Society of the State of California, is taking an active interest in the entire work of the plague. Employers are calling meetings of their employés, teaching them that the plague is in San Francisco; telling them by what means to avoid it; that they should clean up their premises, trap all rats possible, and keep all food away from rats. Resolutions have been passed requesting the assistance of the press, and now all papers excepting the *Chronicle* are publishing information about the plague, and advising the citizens to aid in combating it. There has been no case of human plague for about a month, but this is probably due to the fact that the weather has been cold and rainy, and that there are very few fleas. The rats caught alive are now chloroformed and carefully combed in order to determine the number of fleas on them.

CONNECTICUT.

Annual Meeting of Hospital.—At the annual meeting of the Hartford Hospital the following were elected medical members of the board of managers and directors: Drs. Gurdon W. Russell, Harmon G. Howe, G. Pierrepont Davis, William D. Morgan and Phineas H. Ingalls.

Election.—At the annual meeting of the Hartford County Medical Society, held January 6, the following officers were elected: President, Dr. Fred S. Crossfield; vice-president, Dr. Phineas H. Ingalls; secretary, Dr. William H. Van Strander; assistant secretary, Dr. Orin R. Witter; treasurer, Dr. George K. Welch; librarian, Dr. Walter R. Steiner, and censors, Drs. Thomas F. Kane, Benjamin S. Barrows and Charles S. Stern, all of Hartford. Dr. Horace S. Fuller presented to the society, turnkeys, saddlebags and other relics of some of the early physicians of Hartford.

1. THE JOURNAL, July 6, 1907, p. 37.

FLORIDA.

Personal.—Dr. J. H. Willis, Quincy, has recently been appointed state prison physician.——In a fire at Lake City recently the office of Dr. George W. Abney was damaged to the extent of $400.

Pasteur Treatment.—Daytona is said to be the first city outside of Jacksonville prepared to offer the Pasteur treatment for hydrophobia. Through the efforts of the city health officer a supply of serum has been procured and is ready for immediate use. The services of the officials are to be given gratuitously and for the indigent the laboratory fees will be paid.

Society Meetings.—At the annual meeting of the Escambia County Medical Society, held Dec. 24, 1907, at Pensacola, the following officers were elected: President, Dr. William A. J. Pollock; vice-president, Dr. M. Ernest Quina; secretary, Dr. Juriah H. Pierpont, and treasurer, Dr. Clinton W. D'Alemberte, all of Pensacola.——At the annual meeting of the Ocala County Medical Society, held January 9, the following officers were elected: President, Dr. William H. Powers, Ocala; vice-president, Dr. Carl W. Linder, Anthony, and secretary-treasurer, Dr. Daniel M. Smith, Ocala.

ILLINOIS.

Cocain Bill a Law.—The governor has signed the cocain bill, passed by the legislature. The measure is intended to regulate the sale of cocain and eucain, and heavy penalties are provided for violation.

Appropriation for State Board.—A bill has been proposed for the appropriation of $3,000 to maintain a laboratory and for special research into the cause and prevention of tuberculosis, and $1,000 to furnish free treatment to indigent persons afflicted with rabies.

Contagious Diseases.—A number of cases of scarlet fever are reported from La Harpe, where it is said no quarantine is being observed.——Greer College and the high school at Hoopeston, which have been closed on account of the prevalence of diphtheria, will soon be reopened.——The public school at Roseville has been closed on account of the prevalence of measles.——Two cases of smallpox are reported from Loami. ——In a boarding house in Peoria, 2 cases of smallpox have appeared.——Manchester is said to have a number of well-developed cases of smallpox; the public school has been closed and public gatherings interdicted.——A number of cases of smallpox are reported in Curran.

Chicago.

Personal.—Dr. and Mrs. Casey Wood sailed for the Orient February 6.——Dr. William L. Baum has been chosen as medical member of the retiring board for members of the fire and police departments.

Aid Hospitals.—The concert for the benefit of the Frances Willard Hospital, January 28, netted $1.000 for the institution.——At the ball February 1, at the First Regiment Armory, for the benefit of the new People's Hospital, about $2,500 was realized.

Busts Presented.—Busts of Dr. Robert L. Rea and Dr. William E. Quine were presented to the College of Physicians and Surgeons, February 1. Dr. Alexander H. Ferguson made the introductory address. The bust of Dr. Rea was presented by Dr. Frank Billings and accepted for the college by Dr. Oscar A. King. Dr. William A. Pusey presented the bust of Dr. Quine and it was accepted for the college by Dr. Daniel A. K. Steele.

January Mortality.—During January tnere were 3,096 deaths reported; 392 more than for the preceding month, and 30 more than for the corresponding month of 1907, the respective annual death rates per 1,000 being 16 83, 15.10 and 17.13. Of the deaths, 570 were due to pneumonia; 314 to consumption; 232 to heart diseases; 215 to violence, including suicide; 192 to influenza; 188 to nephritis; 169 to acute intestinal diseases; 129 to cancer; 121 to bronchitis and 111 to nervous diseases. Diphtheria caused 61 deaths; scarlet fever, 60; typhoid fever, 39; measles, 13, and whooping cough, 8.

Deaths of the Week.—During the week ended February 1, 711 deaths were reported; 24 more than for the preceding week and 30 less than for the corresponding week of 1907. The mortality was at the rate of 17.12 per 1,000 per annum. Pneumonia caused 139 deaths; consumption, 66; heart diseases, 55; influenza, 46; acute intestinal diseases, 43, and nephritis, 42. The most marked diminution as compared with last year was in the deaths from scarlet fever and diphtheria. In the corresponding week of 1907 there were 44 deaths from scarlet fever, and last week 15 deaths. In 1907, there were 15 deaths from diphtheria and last week 7. On the other hand, influenza showed a marked increase, as 46 deaths were reported, while in the corresponding week of last year only 12 deaths from this cause were announced.

The Fight Against Tuberculosis.—At the annual meeting of the Chicago Tuberculosis Society, held January 28, the following physicians were elected directors: Drs. George W. Webster, George F. Shears, William A. Evans, Charles L. Mix, Henry B. Favill, Frank Billings, Ethan A. Gray, Nathan S. Davis, Theodore B. Sachs, John A. Robison, Edwin W. Ryerson, Arnold C. Klebs, Ludvig Hektoen and Robert H. Babcock. ——The Illinois Steel Company, South Chicago, through Dr. James Burry, surgeon-in-chief, has offered to give to the Chicago Tuberculosis Institute one of its buildings, rent free, for the use of its dispensary and local headquarters.——The Open Air Sanatorium for Jewish Consumptives has been incorporated, to establish a sanatorium near Chicago, to consist of an administration building and smaller buildings or tents for patients.

Communicable Diseases.—During the week, 386 cases of communicable diseases were reported, of which 99 were of scarlet fever; 88, diphtheria; 79, measles; 42, tuberculosis; 24, each chicken pox and typhoid fever, and 13, whooping cough. As compared with the preceding months, there were 14 fewer cases of diphtheria; 15 of scarlet fever, and 14 of whooping cough, and 10 more cases of measles; 3 of typhoid fever and 24 of tuberculosis. The contrast between the scarlet fever and diphtheria situation between this year and the last is striking, as during the week just closed there were 99 cases of scarlet fever, as against 1,686 in the corresponding week of last year. Last week, there were 88 cases of diphtheria reported and in the corresponding week of 1907, 292 cases.——During the week, 4 cases of smallpox were received at the Isolation Hospital. Of the patients, one was an unvaccinated medical student, who believed himself to be immune because he had not been successfully vaccinated; the second was a non-vaccinated man, and the third patient had an imperfect scar supposed to have been from vaccination in childhood. There are now 13 patients under treatment at the Isolation Hospital.

KENTUCKY.

Personal.—Dr. John J. Moren, Louisville, formerly president and treasurer of the Jefferson County Medical Society, is seriously ill with typhoid fever.——Dr. Vernon Blythe, Paducah, has been elected secretary of the McCracken County Medical Society, vice Dr. James T. Reddick, resigned.

Tuberculosis Exhibit.—The tuberculosis exhibition at Louisville has just closed, after a most successful two weeks, during which time it is estimated that 35.000 people visited the hall. The exhibit will be held for a week each in Frankfort and Lexington.——A bill has been introduced in the state legislature appropriating $25,000 for the fight against tuberculosis in the state, and if this bill passes each city that has a tuberculosis hospital will be aided by the fund.

Milk Decision.—An important decision has just been rendered in the Circuit Court at Louisville in regard to use of the term "certified milk." The milk dealer was first charged with having offered for sale and sold as "certified milk" milk which was not certified by the Milk Commission of the Jefferson County Medical Society. The action was brought under the general provisions of the Kentucky Pure Food Law, which prohibits the sale of any article of food "under the name of another article," and which prohibits the sale of an article of food "if it be labeled or branded so as to deceive or mislead the purchaser or consumer." Before the court evidence of the sale and the markings on the bottle were produced, followed by testimony from the milk commission, other physicians and from state and national officials that the term "certified" in connection with milk, both from its origin and its use, has come to have a distinct meaning, and that therefore the sale of milk as "certified" which is not "certified" in the manner that physicians and consumers expect is misbranding. The justice of the peace upheld these contentions and entered an appealable fine. The case was appealed to the Circuit Court. At the second trial the same evidence was given again and the finding of the lower court sustained. The circuit judge assessed a nominal fine only, but offered to make the fine large enough to allow the defendant to appeal the case to the State Court of Appeals if the defendant desired. The defendant took the smaller fine and agreed to stop the use of the term.

MARYLAND.

Tuberculosis Sanatorium Bill.—A bill has been introduced in the legislature appropriating $175,000 for the completion of the Maryland Tuberculosis Sanatorium in Frederick County. An ideal site has been purchased in the mountains of western Maryland, and the administration building is nearly completed. It will be ready for patients in April.

Food and Drug Act.—The State Board of Health has prepared a food and drug act for Maryland, and has summoned a meeting of the representatives of the Maryland Drug Exchange and other bodies supposed to be interested for its consideration on February 4. The secretary of the state board claims that it is uniform with the federal law, preserves the execution of the law by health authorities and provides for its administration by the State Board of Health, which has had eighteen years' experience in the line, and lastly, follows the example of fourteen states in placing its administration in such hands.

Baltimore.

Library Presented to University.—The library and bookcases of Dr. John R. André have been presented by his children to the University of Maryland. The library numbers about 500 volumes.

January Deaths.—During January 1,201 deaths were reported in Baltimore, which is the largest number ever reported in the city, and exceeds by 161 the deaths of the corresponding month of 1907. Influenza is said to be responsible for the excess.

Personal.—Dr. Leonard K. Hirshberg has been appointed chief visiting physician to Hanover (Pa.) General Hospital.——Dr. William Green has been elected surgeon, and Dr. Isaac R. Trimble, assistant surgeon, of the Franklin Buchanan Camp, United Confederate Veterans.——Dr. Ira Remsen, president of Johns Hopkins University, has been asked by the President to accept the chairmanship of the consulting board of scientists on the enforcement of the Pure Food and Drugs Law.

Laboratories Need More Room.—Prof. William H. Howell, dean of the Johns Hopkins Medical School, calls attention to the urgent need of enlargement and improvement of the pathologic laboratories of that institution. The present building is inadequate and a thoroughly modern and well-equipped one is needed. The present building was not specially designed for the purpose, and does not compare in construction and convenience with the other laboratories. It has also been very much overcrowded.

NEW JERSEY.

Hospital Notes.—The cornerstone of the Municipal Hospital, Atlantic City, was laid January 17. The building will cost about $100,000.——At a meeting of citizens held in Vineland, January 16, steps were taken toward the establishment of a public hospital for that place.

Personal.—Dr. Henry Chavanne, Salem, has been appointed a member of the State Pure Food Commission.——Dr. Henry B. Diverty has been made president of the Woodbury Board of Health.——An attempt was made to rob Dr. Franklin A. Gauntt, Burlington, at the door of his residence, January 11.

Diphtheria in Reformatory.—With 540 inmates in an institution, intended only for 355, an epidemic of diphtheria has appeared in the New Jersey State Reformatory, Rahway, where 23 cases of the disease have been reported The New Jersey State Board of Health has instructed its chief inspector personally to supervise the combat against the disease.

Society Meetings.—The physicians of Woodbury and vicinity have formed a protective association, with Dr. James Hunter, Westville, president, and Dr. Harry A. Stout, Wenonah, secretary-treasurer.——At the annual meeting of the Atlantic City Medical Society, held in Atlantic City, January 10, Dr. Clyde M. Fish, Pleasantville, was elected president; Dr. David A. Berner, Atlantic City, vice-president; Dr. Milton S. Ireland, Atlantic City, secretary-treasurer; Dr. Theodore Senseman, Atlantic City, reporter; Drs. Arthur E. Ewens and Edward S. Sharp, Atlantic City, delegates to the State Society, and Dr. William E. Darnall, Atlantic City, censor.——The Atlanic City Academy of Medicine, at its annual meeting, January 10, elected the following officers: President, Dr. Walter A. Hickman; vice-president, Dr. Clarence Garrabrant; secretary, Dr. Thomas S. Githens, and treasurer, Dr. Thomas G. Dunlap.

NEW YORK.

Proposed Laws.—Assemblyman Warren I. Lee has presented a bill carrying out the views of the Society for the Prevention of Cruelty to Animals. It does not prohibit vivisection, but provides that the building where the experiments are to be performed shall be licensed by the state commissioner of health. It also provides that the animal shall be anesthetized and if serious pain is anticipated after the operation, the animal shall be killed.——Senator Schmer has introduced a bill providing that all patients shall be admitted to the Bellevue and Allied Hospitals free of charge.

State Commission in Lunacy.—The annual report just submitted to the legislature shows the number of insane on Oct. 1, 1907, was 29,093, of whom 13,927 were men and 15,166 women. The number of inmates of the two criminal asylums was 1,014; the number in private licensed institutions was 977. The net increase for the year in all institutions was 791. It is estimated that with the fiscal year beginning October 1, last, there will be needed for the support and maintenance of the state hospitals, commission in lunacy, and pathologic institute, $5,305,000. This is an increase of $1,500,000.——Requests for new buildings are to be held rigidly to actual requirements. There is at present accommodations for an increase for about 800 inmates in the different state charitable institutions.

New York City.

Harvey Lecture.—The sixth lecture in the Harvey Society course, by Prof. Joseph Jastrow, University of Wisconsin, at the New York Academy of Medicine building, Saturday, February 8, at 8:30 p. m., is on "Subconsciousness."

PENNSYLVANIA.

Personal.—Dr. Fred Rice, Sunbury, was painfully burned by an explosion of gasoline at his home, January 21.——Dr. Samuel C. Seiple and wife, Center Square, have gone to California for two months.——Dr. Claud J. B. Flowers has resigned as resident physician at the Harrisburg Hospital and will open an office at Union Deposit.——Dr. John W. Grant, Scranton, has been made deputy coroner of Lackawanna County.

Epidemic Diseases.—Measles is epidemic in Pittsburg, and the director of the health bureau has ordered the temporary closure of four schools. Thus far during the present month, 1,033 cases of measles have been reported, and since the epidemic began a few weeks ago there have been 3,033 cases recorded in the health bureau.——Scarlet fever is reported to be epidemic at Medix Run, where 18 cases in all have been reported.——Several cases of smallpox are reported from Carmichael.

Philadelphia.

Personal.—Dr. F. Mortimer Cleveland, who has been ill in the Municipal Hospital with diphtheria, has fully recovered.——Dr. Howard F. Hansell was elected president and Dr. Edward A. Shumway clerk of the section on ophthalmology of the College of Physicians.——Drs. Samuel McClary and C. M. Desvernine have been elected trustees of the American Oncologic Hospital.——Dr. Oliver P. Rex sailed for Europe January 25.

Health Report.—The total number of deaths reported for the week ended February 1 was 542, a decrease of 78 from the previous week and a decrease of 31 from the corresponding week of 1907. The principal causes of death were: Typhoid fever, 16; diphtheria, 12; influenza, 12; consumption, 62; cancer, 26; apoplexy, 18; heart disease, 53; acute respiratory diseases, 91; enteritis, 14; cirrhosis of the liver, 11; appendicitis, 9; Bright's disease, 45; premature birth, 16; congenital debility, 14; old age, 5; suicide, 2; accidents, 11, and marasmus, 3. There were 281 cases of contagious diseases, with 31 deaths, as compared with 196 cases and 31 deaths in the preceding week.

Hospital Changes.—The following changes were made in the medical staffs of hospitals under the control of the department of health and charities by Director Neff, January 25: Bureau of Health—Municipal Hospital, Dr. Seth N. Brumm, first assistant resident physician, vice Dr. William Drayton, Jr., resigned; Dr. J. Earl Ashe, second assistant resident physician; Dr. Edward T. Clement, third assistant resident physician; Dr. John T. Adeylotte, first assistant physician on the non-salaried staff; Dr. J. Roy McKnight, second assistant physician on the non-salaried staff; Dr. Charles J. Swain, third assistant physician on the non-salaried staff; Dr. Jacob H. Haerer, assistant medical inspector, vice Dr. A. J. Muller, resigned. Philadelphia General Hospital—Drs. Charles H. Gerhard and Howard T. Karsner, appointed assistant pathologists on the visiting staff.

RHODE ISLAND.

Spinal Meningitis at Newport.—The two apprentices at the Naval Training Station, Newport, suffering from spinal meningitis, who were considered hopelessly ill and to whom the Flexner serum was administered, are reported to be convalescent.

Personal.—Dr. Charles V. Chapin, Providence, has been elected second vice-president of the Rhode Island Antituberculosis Association, and Dr. Jay Perkins, Providence, a member of the executive committee.——Dr. Montafix W. Houghton, P. H. and M.-H. Service, Providence, has been appointed surgeon of the Rhode Island naval battalion, with the rank of lieutenant.

Society Meetings.—At the annual meeting of the Washington County Medical Society, held at Westerly, January 9, the following officers were elected: President, Dr. Frank I. Payne, Westerly; vice-presidents, Drs. Michael H. Scanlon, Westerly, and Horace Wilcox, Wakefield; secretary-treasurer, Dr. J. Howard Morgan, Westerly; auditor, Dr. Phillip K. Taylor, Kingston; delegate to the state society, Dr. John Champlin, Westerly, and councilor, Dr. Alexander B. Briggs, Ashaway.——At the annual meeting of the Kent County Medical Society, held in East Greenwich, recently, the following officers were elected: President, Dr. Frank B. Smith, Washington; vice-president, Dr. Charles S. Christie, River Point, and secretary, Dr. William S. Roach, Phenix.

Fresh-Air School.—A fresh-air school, unique among educational institutions in this country, was opened in Providence, January 27. The school is conducted indoors, with great swinging windows on the three sides of each room, extending the length and width of each room, and an extensive system of ventilation affords an atmosphere of cold, pure air, free from germs. The idea of establishing the school was first suggested by the Rhode Island League for the Suppression of Tuberculosis, which had heard of the satisfactory results attained by schools of the kind in Europe. The pupils do not remove their outer wraps unless the weather requires closing the large windows. The teaching force of the institution has been selected largely from experienced instructors and is under the direction of a corps of experts who have made the subject an object of especial study.

GENERAL.

Southern College Association Meets.—The annual meeting of the Southern Medical College Association was held in New Orleans, Dec. 17, 1907, under the presidency of Dr. Christopher Tompkins, Richmond, Va. The paramount issue was the raising of the educational standard of medical students. An effort is being made to establish a high school in every city of every state of the South, which shall have a four years' course. This will enable graduates from high schools to matriculate at once in medical schools. The Atlanta College of Physicians and Surgeons, Medical Department of the University of Arkansas, Little Rock, Ark., and the College of Physicians and Surgeons, Little Rock, Ark., were admitted to the association. The following officers were elected: President, Dr. Christopher Tompkins, dean of the Medical College of Virginia, Richmond; Dr. William B. Rogers, dean of the Memphis Hospital Medical College, Memphis, Tenn., vice-president, and Dr. Lewis C. Morris, Birmingham (Ala.) Medical College, secretary-treasurer. Atlanta was selected as the next place of meeting.

State and Municipal Control of Tuberculosis.—Surgeon-General Walter Wyman of the Public Health and Marine-Hospital Service has sent the following letter to public health authorities throughout the country inviting their attention to the importance of the International Congress on Tuberculosis to be held in Washington, D. C., Sept. 12 to Oct. 21, 1908, and urging attendance at the sessions, especially of Section 6 which will be devoted to the consideration of the "State and Municipal Control of Tuberculosis:" "The prevention of tuberculosis is engaging the increasing attention of public health authorities and philanthropists throughout the world. There is certainly no more important public health question demanding the activities of sanitary officers at the present time, and it is desirable that our people generally recognize its importance and enlist in the campaign against tuberculosis. The diffusion of knowledge with respect to the disease is no doubt one of the most important measures that can be instituted by public health officials. With the view to this end, an International Congress on Tuberculosis will be held in Washington, D. C., Sept. 21 to Oct. 12, 1908. At this congress all phases of the problem will be considered, a number of eminent specialists from abroad having signified their intention to participate in the deliberations. Section 6 will be devoted to the national state and municipal control of the disease, and it is urged that all public health officials attend its sessions, participate in the benefits to be derived from discussions of the governmental responsibilities and activities, and as a result be better prepared to assist in a systematic campaign against the disease throughout the country."

SENN MEMORIAL SERVICE.

Under the auspices of Rush Medical College, Northwestern University Medical School, College of Physicians and Surgeons, Chicago Medical Society, Chicago Surgical Society and the Nicholas Senn Club, memorial services to the late Dr. Nicholas Senn were held at the Music Hall, Fine Arts Building, February 2, at 2:45 p. m.

REV. FRANK W. GUNSAULUS, D.D., delivered the invocation.

PROF. ALBION W. SMALL of the University of Chicago acted as chairman, and in opening the services said that by circumstances beyond control, the official heads of the three universities, who would naturally have taken part in the memorial services, were prevented from being present. Dr. Judson is in New York, President James is confined to his home by illness, President Harris is detained at his home by serious illness in his family. This absence of the proper official representation is therefore no index of the part which the sympathies of these universities take in the tribute of respect and admiration for Dr. Senn. Not merely the professional but the academic faculties regard his death as a loss to the educational interests of Chicago, of Illinois, of the country, and the world. The representatives of these institutions bow their heads in sorrow and join with the medical profession in celebrating the worth and notable professional achievements which are attached to the name of Dr. Senn.

Nicholas Senn as a Teacher.

DR. FRANK BILLINGS, speaking for Rush Medical College, said a majority of those present have had the pleasure of listening to Dr. Senn and of witnessing his magnificent manner of teaching. Dr. Senn was a teacher long before he began medical college work. In his early days in Wisconsin he was a teacher. He taught those who came in contact with him as individuals, and in Milwaukee he organized a medical society which was the center of medical thought in that city. Many of his pupils are now living examples of the best medical and surgical practice as taught by Senn. Dr. Senn's first experience as a medical teacher in a college was in 1884, when he was called to the College of Physicians and Surgeons, Chicago, to the chair of the principles and practice of surgery. He continued his services in that institution for four years after which he accepted the chair of the principles of surgery and of surgical pathology in Rush Medical College, where he taught from 1888 to 1891. There his teaching was phenomenal. On a blackboard Dr. Senn would put down a synopsis of the subject of his lecture and would then follow it very closely. He knew medical literature, and hence his lectures not only contained his own opinions concerning the principles of surgery, but the opinions of others. He had a prodigious memory, and without recourse to notes gave notations from this book and that book on the subject of which he was speaking. He remained in that position but a short time. He was then called to occupy the chair of professor of the practice of surgery and of clinical surgery in Rush Medical College through the death of Prof. Charles T. Parkes. His clinics were fashioned after German surgical clinics, but modified by Senn and made better therefor. He showed at these clinics pathologic specimens which were obtained from former operations. These he described as a pathologist. He followed this with the demonstration of microscopic preparations made from some gross specimens which he had previously shown. These were passed about and explained. He exhibited and demonstrated patients who had been before the class previously, explaining what operations had been done on them, the processes of healing of wounds, etc. Immediately after this he would show new patients, operate, and then was at his best. He was a wonderful diagnostician in surgery. He remembered everything. Those who were in contact with him for many years say that in some cases he could tell the character of the disease from which a patient suffered simply by looking at him; while other physicians were at a loss to know what the disease was. Senn knew, because ten or twenty years before he had seen a like case. He knew the methods of examination and demonstrated his reasons for diagnosis before his class. As to treatment, he differed from most surgeons, in that if the case was not an operative one, he could explain as fully and clearly what the medical treatment should be as if he were an internal medical man instead of a surgeon. He was a dextrous operator and did not quail before the most formidable operations. He had a facility of expression in describing disease that few men possess. He was didactic—perhaps Socratic. He had a good voice, and was never at a loss for words. He impressed on his students, whether they were practitioners or undergraduates, the fact that he understood his subject; that he knew what should be done for every dis-

ease that came under his notice. He was eminently a teacher of the arena, and was never so happy as when standing in a large arena full of students to whom he could expound the principles of surgery. He was a writer, and in everything he wrote he was a teacher, and certainly no one man in the medical profession has ever written as much. Many of his books are still used as text-books. They have been translated into other tongues than English. In Japan they are used as text-books in medical schools and in the army. In Russia they have been translated and are used in the army. These books are authoritative on the subjects of which he wrote. This is particularly true of his Principles of Surgery. No other man in America has done as much as Senn did in that book for American surgery. No other man probably will ever occupy his place, nor will any other man unite in one individual his facility of expression in the teaching of a large number of students and at the same time wielding a pen with such clearness of expression in writing books that are now considered as authoritative and used the world over.

Nicholas Senn as a Surgeon.

DR. ALBERT J. OCHSNER, representing the Chicago Surgical Society, said that Nicholas Senn possessed the intuition of the true prophet in surgery. Thus he recognized almost at the beginning of his professional career three aids in the development of surgery which enabled him to rise from the obscure practitioner of medicine to the world-famed surgeon, namely, clinical microscopy, animal experimentation and antiseptic surgical technic. These three conditions he utilized to the utmost. His great logical mind enabled him to grasp their importance as well as their scope. His phenomenal enthusiasm carried him over every obstacle; his almost superhuman physical and intellectual strength enabled him to accomplish in a few years that for which in others a lifetime would have been too short, and his unchanging devotion and ceaseless industry enabled him to continue these labors through a period of nearly forty years. But his great scientific attainments did not in any way obstruct his practical usefulness. His early training on the Wisconsin farm had not only given him a most vigorous development of body and mind, but also a very high degree of practical skill and dexterity. In this way he became the most exalted exponent of surgical science and at the same time quite as distinguished a leader of successful surgical technic. With all of these qualities and with the power of conveying his knowledge to others as a writer and orator, he naturally became, in the eyes of the world as well as in fact, the master surgeon of the Western Continent. Looking back to tne days when Professor Senn delivered his first course of lectures in this city, Dr. Ochsner said that there never were such lectures on surgery before, and it is safe to predict that their equals will never again be produced. They were inspired; they were the words of a prophet; they made young men enthusiastic workers in this great field for the remaining years of their lives. There is no one among us who does not owe a debt of gratitude to this great man. His genius, his enthusiasm and his devotion have inspired us; his learning has elevated us; his industry and perseverance have served a notable example, and his skill has relieved our suffering. There will for all time to come be inscribed on the pages of surgical history high on the roll of honor the name of Nicholas Senn.

Nicholas Senn as a Man.

DR. WILLIAM E. QUINE, representing the College of Physicians and Surgeons, said that in Senn a great body gave loyal backing to a great mind. His powers of endurance of both body and mind have rarely been equaled by any of God's creatures; and he needed them all, for his hunger for the honors of achievement was so insatiable that it would scarce brook needed rest. He worked more hours per day, per year, per decade than any man he has known; and the mountainous fruitage of his toil has been the wonder of his friends. For him recreation was merely another kind of work, and serious work at that. He forgot nothing; and everything he had ever known seemed ready for instant use. Without a minute for reflection he could bring to bear on any question within the domain of his serious study all the batteries of literature from the very inception of investigation of the subject through each successive stage of development down to that very day; quoting names and dates with unvarying accuracy, and keenly analyzing the validity of every claim; and do it as readily and confidently as he could repeat the Lord's Prayer. Such powers, supported by his own exhaustive investigation of the same subject, made him matchless in conversation and unconquerable in debate. His passion for authorship dominated every other interest he had in life. He stands sponsor for twenty-three published books, and at least two that are still in manuscript, every word of which was written by his own hand and with his own pen—to say nothing of unnumbered lectures, essays and addresses that have appeared in print under his name. Nicholas Senn was a man of heroic mold. His courage was equal to any danger. Whether assailed by the shocks of surprise incident to grave and complicated surgical operations, when hundreds of critical eyes were watching every movement and when death lurked within a hair's breadth of the edge of his scalpel, and hesitation meant tragedy; or hunted and beset by murderous Arab robbers on the desert of Syria and without the possibility of aid; or enclouded in "the pestilence that walketh in darkness and spareth not;" Senn was always undaunted, quick, sagacious, and unerring and ready to give a good account of himself every minute of the time. He could out-Luther Martin Luther. He could counterpart the sacrifice of his countryman, Arnold Winkelreid; he could denounce corruption and dishonor at the peril of his life, equal to Jerome Savonarola, and walk to the stake as sturdily as John Huss; and he could stand shoulder to shoulder with "Horatius at the Bridge," and do battle to the death and with challenge and defiance in his heart to the last throb. The pomp and formalism of military parade fascinated him, and the insignia of military rank allured, charmed and enthralled him. Senn had a world of admirers, but few intimate friends. True, there were countless thousands who were friendly and deserving of his friendship; but few of these were admitted to his confidence. He was courteous and affable to everybody, but reserved, except to the favored few. These had been weighed and measured and tested and approved; and there was not an immoral, vulgar, profane or deceitful one among them all. For them Senn's loyalty and confidence knew no limit. He was a man of refined and exalted sentiment, and his heart and mind and mouth were as clean as a little girl's. He was delightfully free-handed with his friends, but frugal in the small affairs of life; frugal, not because he cared for money, but because wastefulness was crime.

Dr. Quine referred to the Senn collection of books in the Newberry Library, representing an outlay of $50,000, and placed at the service of the medical profession for all time, as a donation; also the Senn Memorial Building erected at a cost of $50,000 for the use of science; the Senn Professorship endowed in the sum of $25,000, and the Senn Fellowship endowed in the sum of $15,000, and the Senn Rooms in the St. Joseph's Hospital endowed in the sum of $35,000, for the perpetual care of stricken members of the medical profession, leave nothing to be said but this: Nicholas Senn, as a man, has done more for the medical profession than all other physicians combined who have ever lived in this great city.

Finally, Dr. Quine said: "I can imagine him now within three degrees of the North Pole with Peary. I can imagine him left there—alone. No living thing within sight, within hearing, within reach—alone. Without the possibility of shelter or of help, and with desolation around him and death in the air—alone with God. 'And God saw everything that He had made, and behold it was very good.' A man. In God's own image and a glory to His power—Senn.

"We symbolize a life arrested in the midst of great productiveness and power by a broken column. But a broken column would not typify Senn; rather mark the spot where rests his honored clay by a granite shaft, broad-based and deep-set in Mother Earth, and hewn four-square to every wind that blows—and finished at the top."

Nicholas Senn as a Physician.

DR. HENRY B. FAVILL, representing the Chicago Medical Society, said that the career of Nicholas Senn illustrates that a man is not made by circumstances. Perhaps the most noteworthy fact in the professional development of Dr. Senn is that his greatest and most enthusiastic scientific achievements were during a period when his daily toil in medical practice was the most burdensome. After completing his medical schooling, and serving in the Cook County Hospital, he plunged into the thick of country practice. Promptly he was recognized as a man of strength and progress, and very early in his career attracted the attention and commanded the respect of the profession in Wisconsin. Steadily he forged ahead, not only in his private practice, but in public recognition. Interested, indefatigable and effective, it was but a question of a few years when he naturally and inevitably sought in Milwaukee a broader field for his activities. There he continued aggressive, original and inspiring. He has never known a man whose capacity for sustained labor, not for a few days, but month after month, was as great as that of Dr. Senn. In this fact, coupled with his indomitable perseverance, lies the

explanation of his remarkable productions during the period from 1880 to 1895. The effect of his commanding supremacy on the profession of Wisconsin was pronounced. He never held the place of rival or competitor; he was the acknowledged leader, and young men drew from him inspiration and encouragement. Generalization and the whole morbid picture were far more satisfying than surgical technic. Not at all early in his career did he become specifically a surgeon. Never in his career did he become only a surgeon. As he reached his full maturity, the dawn of scientific medicine occurred. He was among the first to grasp the enormous significance and possibilities of the new life. Day and night he labored with the scientific problems of medicine, always with the broad relationships of the living organism as the background to his conception. At this period he acquired the deep friendship and respect of Dr. Christian Fenger, and the picture of those two masters, shoulder to shoulder, during those days of medical conflict, demonstration and revolution, is never to be forgotten. This friendship furnished him untold comforts and inspiration in his scientific pursuit, and as a result of it the medical profession in the western states has profited inexpressibly. In his early life he had an enormous experience in general practice. In his later life he unfailingly interpreted his surgical problems in the light of his broad medical experience. No man knew better than he the triumphs and possibilities of operative management. No man less than he was carried away by enticing possibilities from the sound footing of medical judgment. Surgery owes him an inexpressible debt, but those who knew him best, and particularly during the great part of his life when he was an active factor in general medical affairs, know that his greatest contribution to the interest, intensity, ideals and scientific conception of medicine, was as a physician.

Nicholas Senn as a Traveler.

DR. D. R. BROWER, representing the Nicholas Senn Club, said that Dr. Senn was probably the most traveled medical man in this or any other country. His journeyings included trips through every state and territory in the Union; the Dominion of Canada, from Labrador to British Columbia; he went as far north as Etah in Greenland, the most northern point inhabited by human beings in the world, and as far south as Punta Arenas, the most southern town in the world, and visited all the countries in between. He made two trips around the world, one by way of Siberia, the other by way of India. He visited every country in Europe; he explored Africa and all the important islands of the Pacific and Atlantic oceans. With the exception of two or three insignificant countries in Asia, he had, indeed, seen the whole world. He was a pleasant traveling companion. He knew how to travel. He never fussed about things that are often sources of discomfort to many travelers; he was so intent on studying nature and humanity that the trifles of life never long engaged his attention.

At the International Medical Congress at Moscow, in 1897, he received many honors. He delivered one of the three general addresses, selecting English as the language, thus showing his loyalty to his adopted country, and it was received with great enthusiasm. The czar had invited him to be his guest at the Kremlin, but this great honor he declined, giving as a reason that he preferred to remain with his American companions. The night of the great banquet in the Arcade, the Russian medical men bore him on their shoulders and in triumphal procession marched up and down the corridors, singing the praises of the great American surgeon.

Dr. Senn's six books of travels contain an immense fund of information gathered from many sources. They are excellent guide-books, descriptive of peoples, countries, fauna, flora, climatic conditions, and the relation of health and disease. His style was entertaining, his language choice, often dramatic, often poetic. His trained perception and his mature judgment made his conclusions always valuable.

"The master surgeon's journeys in this world have ended. A noble, generous, self-sacrificing life has begun its journey in the great beyond, and when he has reached the presence of the Great Physician, whom he loved so well, then may it be said to him: 'Well done, thou good and faithful servant. Thou hast been faithful over a few things; I will make thee ruler over many things. Enter thou into the joy of thy Lord.'"

PROFESSOR SMALL, in bringing the service to a close, said: "There is a meaning to this memorial service, and while it is not exhausted by speaking and the hearing of praise, the real meaning of it is in the mind and the renewal of allegiance to ideals. A man who has done something worthy of praise is a social asset, not merely as a memory, but as a mark to be reached. We have heard the character and worth of Dr. Senn praised because of his honesty as a scientist; his ingenuity as a teacher; his resourcefulness as a physician; his courage as a surgeon; his loyalty as a friend, a citizen and a man. The dignity and the worth of our tribute are in the degree in which we are saying these things of him for his own place and for his own part in life. These things we will value; these things we will emulate; these things as we have the ability, we will promote."

FOREIGN.

Death of Physician at Bedside.—Dr. Merling of Birkenfeld, Germany, was attending a child in a neighboring village who required tracheotomy. At the moment when he had completed the incision he sank dead to the floor, seized with cardiac paralysis, while the child bled to death.

Campaign Against Rabies in India.—Owing to the prevalence of rabies in Simla, the health officer of that town has started a campaign against jackals, large numbers of which exist in the vicinity. The *Lancet* states that a man has been engaged to exterminate the animals by poison and also by shooting them. Bites caused by rabid jackals are always of more severity and graver prognosis than those caused by dogs.

Personal.—Roux, director of the Pasteur Institute at Paris, has been appointed chief of the national public health service. ——The oldest member of the profession in Berlin, Dr. F. Körte, celebrated, January 16, his ninetieth birthday, and received numerous congratulations, both on his own achievements and good health and on the achievements of his sons who have all taken high rank in scientific circles, including W. Körte, the prominent surgeon.——The freedom of the city of Glasgow has been conferred on Lord Lister.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Jan. 18, 1908.

The Salaries of Medical Women.

Among medical school inspectors the board of education states that many women are likely to be appointed. In view of the prospect of increased employment of medical women the Association of Registered Medical Women has passed the following resolution: "As women are equally bound with men practitioners by the ethical laws of the profession, women practitioners should under no circumstances accept a lower salary than has been agreed on by the profession as a minimum. When men and women practitioners are doing identical work, the rate of payment should be the same."

The Health of the British Navy.

The report on the health of the navy in 1906 shows a continuous improvement in the general health of the fleet as compared with that of previous years. Not only are the invaliding and death ratios for the year lower than the average for the last nine years, but the average loss of service for each person has dropped from 12.79 to 10.6 days—the lowest recorded since 1856. An addendum to the report, on diving perils, by Staff Surgeon Rees, is of considerable interest. He finds a large percentage of cases of caisson disease in men over 40, and points out the danger of employing divers of that age except in shallow water. Another point of interest is the greater liability to this disase of fat rather than of spare men. Rees suggests the elimination of the fat man as a diver and points out that his greater proclivity is in accordance with what is known of the disease; a man who carries about with him a huge reservoir for nitrogen, such as is provided by the abdominal fat, must, other things being equal, be more liable to the formation of bubbles than a spare man.

Plague in Queensland.

Dr. Burnett Ham, commissioner of public health for Queensland, has made a special report on plague in that portion of Australia. The report contains the accumulated experience of eight years, and does not accept unqualifiedly the rat-flea theory of the causation of the plague. Dr. Ham says: "It is of the greatest importance, in accepting the rat-flea hypothesis of plague, that the habits and distribution of the rat and the life history of the rat flea should be minutely investigated."

Society Formed for the Destruction of Vermin.

A new society has come into existence in England to inaugurate a crusade against rats wherever found, on the plea that these animals are dangerous to the public health, as well as injurious to many agricultural and commercial interests. The society will cooperate with one or two foreign bodies having a similar purpose in view. Sir James Crichton Browne, the orator of the British profession, delivered an eloquent address at a meeting held to inaugurate the society in which he dwelt at considerable length on the necessity for killing rats wherever found.

Therapeutics

[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable. Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician. It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters; that a teaspoon holds five cubic centimeters, i. e., more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses.]

Cardiovascular-Renal Disease.

Prof. James Tyson of Philadelphia (*American Journal of the Medical Sciences*, January, 1908) thoroughly discusses the diagnosis and treatment of this disease. He carefully points out what is understood by Bright's disease, the character of the nephritis that is caused by cardiac defect, and the condition of the heart and kidneys caused by general arteriosclerosis.

It seems to be true that continued high blood pressure (whatever the cause of such increased tension may be) or a prolonged circulation in the blood of irritants, perhaps the products of intestinal indigestion, may cause general arterial disease. Tyson believes that when the arterial tension is high in arteriosclerosis the kidneys are insufficient, while if the arterial tension is low the kidneys are doing good work, but the left ventricle of the heart is not equal to the increased work that the hardening of the arteries puts on it. Combined vascular and renal disease will cause secondary hypertrophy of the heart, and the circulation will be pretty good so long as the heart is able to do the extra work.

Whether the arterial disease precedes the renal defect or the small contracted kidney precedes the arterial disease, is often impossible to decide. Both conditions begin insidiously; neither may show albumin in the urine; both may show a few hyaline casts; both may cause dizziness, symptoms of anemia, and some imperfect circulation; neither may show edema. Retinitis albuminurica, i. e., hemorrhages into the retinæ, would point toward serious renal defect, while considerable emaciation would point to general arteriosclerosis.

We should recognize three conditions: A general arteriosclerosis with a gradual defect of the kidney from the general arterial disease and with hypertrophy of the heart as a secondary consequence of both conditions. Second, there may be gradually contracting kidney with secondary arteriosclerosis and the surely secondary hypertrophy of the heart. Third, there may be a cardiac lesion, especially of the mitral valve, causing gradual failure of the right ventricle, passive hyperemia of the abdominal organs quickly felt by the kidneys, and with their prolonged passive congestion a secondary nephritis occurring. Toxins circulating in the blood from circulatory and renal insufficiency may cause a secondary arterial disease. In this form of cardiovascular-renal disease considerable quantities of albumin may be excreted in the urine with a great variety of casts. Dropsy, at first pendent and circulatory, is of frequent occurrence in this third type.

Without arterial disease and without valvular lesion a gradually increasing myocarditis, due to severe infection, severe physical exertions, toxins, or the continuous circulation of poison such as too much nicotin, can soon produce renal defect as well as circulatory deficiency. Albuminuria and dropsy are consequences of this condition, and may occur at any age without arterial disease.

It is often difficult to differentiate between chronic parenchymatous nephritis and chronically contracted kidney in which the hypertrophied heart has finally become dilated, adding circulatory failure to the nephritic symptoms. A distinction can perhaps be made by the presence or absence of uremic symptoms. If there is excretion of a large amount of albumin and casts and the dropsy is mostly pendent and still there are no uremic symptoms (such as headache, nausea, vomiting, sudden short attacks of eye blindness and high blood tension), the heart is probably primarily at fault. If the above uremic symptoms are present, the kidneys are badly diseased. The difference seems to be in the ability of the kidneys to produce an antitoxin or to counteract toxins. In other words, there seems to be an internal secretion of the kidneys, which secretion is lost in real renal disease. The prognosis is, then, better in primary cardiac lesions with serious kidney disturbance than when the kidney lesion is primary. As Tyson so well points out, in apparently hopeless cases the patients may occasionally improve and be able to attend to their duties if the cardiac disease is primary.

He advises the following treatment for cardiovascular-renal disease: When there is chronic interstitial nephritis with polyuria, small amount of albumin, a few hyaline and granular casts, hypertrophy of the left ventricle, sclerosed arteries and high blood pressure, without dropsy, the condition is, of course, incurable. However, the whole condition can be improved by removing all irritants from the blood, largely by modification of the diet, by the curtailing of the amount of food taken and especially the amount of proteid ingested, and the withdrawal of all alcohol, and perhaps tea and coffee, from the diet. If the condition has been caused by gout, or if gouty symptoms are present, or if there is a gouty heredity, all substances rich in purin, such as sweetbread, liver and kidney, should be avoided, and it is even often best to limit the meat to once a day. In this manner the uric-acid production is decreased.

If there is a history of syphilis, this disease should be treated, but Tyson does not say whether with iodids or with small doses of mercury. Without manifest symptoms of syphilis, iodid in small doses would seem the drug indicated. Whatever the cause of the condition may be, as much mental and physical rest as possible should be given the patient, at least until there is marked improvement. It is doubtless impossible to improve the condition of the sclerosed arteries, but the progress of the disease may certainly be retarded with iodids, which inhibit the growth of connective tissue and are vasodilators. They also doubtless diminish the viscosity of the blood, which is considered one cause of arteriosclerosis. Tyson prefers the sodium iodid for long-continued use, and certainly this salt is to be preferred, as the potassium element is more or less of a muscle depressant.

℞.	gm. or c.c.		
Sodii iodidi	10	or	ʒiiss
Aquæ	100	or	fl ʒiv

M. et Sig.: A teaspoonful, in milk or water, three times a day, after meals.

If the iodid is to be long given for the above conditions, the dose may be reduced one-half, viz., to 0.25 gram (4 grains), three times a day, or to even less. How much of the favorable action in inhibiting connective tissue growth and reducing the blood tension is due to the iodid as such, or how much is due to the iodid stimulating the thyroid gland can not be determined, but certain it is that at the time of life when this cardiovascular-renal disease is most in evidence and abnormal connective tissue formation is on the increase, the thyroid is diminishing its secretion. It is also a fact that iodid or iodin is a stimulant to the thyroid gland. It has also been shown that for perfect action the thyroid secretion must have a certain amount of iodin. If the thyroid secretion is short on iodin, and if it can get it from a drug, its activity is increased and its secretion perfected. For this reason a small amount of iodid given two or three times a day, or a small dose of thyroid

substance, as 0.10 gram (2 grains) of the dried extract once a day, given for a long period, in this disease is of marked physiologic benefit.

If there are retinal symptoms (retintitis albuminurica), instead of the iodid Tyson advises the biniodid of mercury, as:

℞. gm.
Hydrargyri iodidi rubri..... |100 or gr. ii
Sacchari albi ..... 5| 3iss
M. et fac pilulas 50.
Sig.: One pill three times a day, after meals.

Or:

℞.
Tabletas hydrargyri iodidi rubri, āā.... | gr. 1/30
No. 50.
Sig.: One tablet three times a day, after meals.

Digitalis is not as a rule indicated in the above condition. The heart action is generally too powerful and the blood tension too high, hence more frequently the tincture of aconite is indicated, in doses of from three to five drops, three or four times a day, until the blood tension is lowered. Nitroglycerin is a very valuable drug to meet this indication, and can be used much longer than can aconite and does not require the continual observation of the patient as does aconite.

℞. c.c.
Spiritus glycerylis nitratis..... 25| or fl℥i
Sig.: One drop, in water, every two hours, if needed.

Or:

℞
Tabletas glonoini, āā gr. 1/200
No. 50.
Sig.: One tablet three or four times a day.

Or:

℞. gm. or c.c.
Sodii nitritis ..... 4| or 3i
Aquæ .....100| fl℥iv
M. et Sig.: A teaspoonful, in water, three times a day, after meals.

General daily massage is of great benefit when the circulation is weak and the heart is primarily at fault. If there is arteriosclerosis, massage is often not well tolerated.

If there is great circulatory failure, the patient must be in bed, whether he believes he can rest there or not, and after a day or two of rest he realizes that he has improved.

If there are edemas and dropsies, with kidney defect (which condition generally calls for a milk diet) it should be distinctly understood that all liquids should be given in small quantities only. It is a serious mistake to give much liquid of any kind to patients with dropsy. If the blood vessels can be made thirsty, they will take up water from the tissues or from exudates, and large amounts of water ingested when there is anasarca will not aid in causing diuresis.

If the heart is primarily at fault, digitalis may be indicated, and should be given in sufficient doses for physiologic action. The effect on the kidneys must, of course, be watched, as any great diminution of urine excretion would preclude the further use of this drug. If the kidneys are seriously in trouble digitalis should generally not be used.

Hydragogue cathartics (and the salines are the best), with hot air or vapor baths or hot packs, with the diminution of liquid ingested, and the withholding of salt from the diet, will generally cause the blood gradually to pick up the water from the tissues. The physiologic reason that sodium chlorid should be withheld seems to be that this salt enters the tissues with the exudate and then continues to demand water from the blood. If the salt is withheld, the serum soon begins by osmosis to pass into the blood vessels again and the anasarca becomes less.

Diuretics are often of value in this cardiovascular-renal disease with edema, but also often fail. The best are those of the theobromin and caffein group, as:

℞. gm. or c.c.
Sodii-theobromi salicylatis..... 10| 3iiss
(Diuretin) | or
Aquæ .....100| fl℥iv
M. et Sig.: A teaspoonful, in water, four or five times a day.

Or:

℞. gm. or c.c.
Sodii-theobromi acetatis ..... 10| 3iiss
(Agurin) | or
Aquæ .....100| fl℥iv
M. et Sig.: A teaspoonful, in water, four or five times a day.

Or artificial theophyllin:

℞. gm.
Sodii-dimethylxanthin acetatis ..... 6| or 3iss
(Soluble theocin) |
Fac chartulas 20.
Sig: One powder, dissolved in plenty of water, three times a day, after meals.

[Theocin is irritant to the stomach unless well diluted.]

Also very valuable as a cardiac stimulant and diuretic is caffein, as:

℞. gm.
Caffeinæ citratæ ..... 3| or gr. xlv
Fac capsulas 20 (dry).
Sig.: One capsule, with water, every eight hours.

Or:

℞ gm.
Caffeinæ sodio-benzoatis ..... 4| or 3i
Fac capsulas 20 (dry).
Sig.: One capsule, with water, every eight hours.

Also many times successful as a diuretic is spartein, and spartein has been given in too small doses.

℞. gm.
Sparteinæ sulphatis ..... |60 or gr. x
Sacchari lactis ..... 2| 3ss
M. et fac capsulas 20 (dry).
Sig.: One capsule four or five times a day.

As above stated, if uremic symptoms are not present and the kidneys are secreting, although the urine may be loaded with albumin, digitalis may be given, as:

℞. gm. or c.c.
Potassii citratis ..... 40| or 3x
Infusi digitalis .....200| fl℥vii
M. et Sig.: Two teaspoonfuls, in water, three times a day, after meals.

The alkaline potassium salts seem also to promote osmosis toward the blood vessels so that the edema often diminishes. When the edema is mostly cardiac, the following calomel combination is often of marked value:

℞. gm.
Hydrargyri chloridi mitis..... |60 gr. x
Digitalis ..... 1| or gr. xv
Scillæ ..... 2| gr. xxx
M. et fac capsulas 20 (dry).
Sig.: One capsule, with water, four times a day.

It is sometimes best to inhibit slightly the cathartic action of the calomel with a small dose of morphin, as 1/10 of a grain once or twice during the day. If the calomel combination has done no diuretic good in forty-eight hours, it should be stopped.

Sometimes when other medication has failed to remove water from the tissues, Canadian hemp has been of value. This may be given as:

℞. c.c.
Fluidextracti apocyni ..... 25| or fl℥i
Sig.: Fifteen drops, in water, every three hours.

Or:

℞. gm.
Apocynin. cryst. ..... |60 or gr. x
Sacchari lactis ..... 2| gr. xxx
M. et fac capsulas 20 (dry).
Sig.: One capsule, with water, every three hours.

The frequency of administration of the Canadian hemp should be diminished as soon as diuresis occurs.

When a simple saline purgative is not satisfactory, the compound jalap is valuable, as:

℞.	gm.		
Pulveris jalapæ compositi.....	10|	or	3iiss

Fac chartulas 5.

Sig.: One powder at once, and repeat in four hours if needed. Or a powder may be given every morning.

Elaterium should not be used if there is much cardiac weakness, and not unless there are uremic symptoms.

Pharmacology

Antikamnia; Still Further Duplicity.

Some three years ago, soon after its organization, the Council on Pharmacy and Chemistry published the results of analyses made under its direction of certain proprietary medicines whose principal ingredient, and the one on which their therapeutic action depended, was acetanilid. Among these proprietaries was Antikamnia, approximately 70 per cent. of which was shown to consist of this drug, acetanilid.

As we mentioned at the time,[1] when the Food and Drugs Act went into effect, the manufacturers of this nostrum, instead of continuing to put out the same acetanilid mixture as they had been doing, radically changed the composition by substituting acetphenetidin (phenacetin) for acetanilid. By making this change the company avoided the extremely disagreeable necessity of acknowledging on the label the truth of what had been published regarding its composition. Consequently, in complying with the Food and Drugs Act, instead of stating on the package that it contained a certain quantity of acetanilid, it could, and did, place on the label this legend: "Antikamnia tablets in this original package contain 300 grains of acetphenetidin, U. S. P., per ounce." This is all the law demands; it does not require a statement as to what a preparation does *not* contain. In this instance, however, the label announced that the tablets "contain no acetanilid, antifebrin, antipyrin, alcohol, morphin, opium, codein, heroin, cocain, alpha- or beta-eucain, arsenic, strychnin, chloroform, cannabis indica or chloral hydrate." While this imposing tabulation of the negative virtues of the mixture doubtless makes good advertising "copy," a simple statement of its actual composition would be more to the point.

What was the object of publishing this unnecessary denial on the label? Was this an attempt to question the truth of the statement that we and others had published that Antikamnia was an acetanilid mixture? Undoubtedly.

TWO KINDS OF ANTIKAMNIA ON THE MARKET.

Knowing that this nostrum is being largely advertised in Great Britain and Canada, and wishing to know whether the Antikamnia sold abroad is the same as that now on the market in this country, we, last November, obtained some Antikamnia from London. This has been analyzed in the Association's laboratory. As we suspected, the analysis[2] shows that, as sold abroad, Antikamnia is of the same composition as that sold in this country before the Food and Drugs Act went into effect, viz.: Acetanilid, 67.75 per cent.; caffein, 4.88 per cent., and citric acid and sodium bicarbonate, by difference, 25.36 per cent. This, it will be noticed, corresponds with the results of the analyses made under the direction of the Council on Pharmacy and Chemistry and published in THE JOURNAL, June 3, 1905. Our chemists also have analyzed the Antikamnia now on the market in this country. This analysis[3] gives the following results: Acetphenetidin (phenacetin), 72.05 per cent.; caffein, 13.95 per cent.; citric acid and sodium bicarbonate, 14 per cent.

Thus while the old Antikamnia contained approximately 68 per cent. of acetanilid, the new contains approximately 72 per cent. of acetphenetidin (phenacetin), the other ingredients being in about the same proportion.

ANTIKAMNIA AND QUININ.

Incidentally, attention has been called previously[4] to the fact that the preparation marketed under the name of "Antikamnia and Quinin" differs materially from what would be expected if it were, as its name denotes, a mere combination of quinin and what is sold as Antikamnia. In short, it was found that starch was substituted in the "Antikamnia and Quinin" mixtures for the bicarbonate of sodium which is found in the Antikamnia itself.

Further analyses just made[5] disclose the same condition, ex-

1. THE JOURNAL A. M. A., Jan. 26, 1907, p. 340.

2. The package of Antikamnia as received in the laboratory was enclosed in a carton bearing the inscription, "Antikamnia Powdered. The Antikamnia Chemical Co., St. Louis, Mo.," and was otherwise similar to the packages formerly found on the American market. The contents of the package of Antikamnia as received were analyzed according to the method proposed by W. A. Puckner (Proceedings of the Amer. Pharmaceutical Assn., 1905, liii, 292), and found to contain: Acetanilid 67.75 per cent., and Caffein 4.88 per cent. The content of citric acid and sodium bicarbonate (by difference) was found to be 25.36 per cent. [From the chemist's report.]

3. The Antikamnia found on the American market to-day bears labels in compliance with the Food and Drugs Act, as already commented on in THE JOURNAL (Jan. 20, 1907, 340.) This preparation was analyzed in the same manner as the preparation bought in the English market, and was found to contain: Phenacetin 72.05 per cent. and caffein 13.95 per cent. The content of citric acid and sodium bicarbonate (by difference) was found to be 14.00 per cent. In attempting to determine caffein in the presence of phenacetin it was found that variable results were obtained; that some phenacetin always accompanied the caffein after the supposed separation. This was due no doubt to the slight solubility of phenacetin, and to the fact that a compound of phenacetin is precipitated by iodin. This compound described in Beilstein's *Handbuch der Organischen Chemie*. Ergänzungsband ii, p. 401, as iodophenin has the formula: $C_{20}H_{24}O_4N_2I_2$. It is very insoluble in water, and so is obtained along with caffein periodid when that substance is isolated. As it is easily decomposed, free phenacetin is probably again liberated and goes through with the caffein when the precipitate, resulting from the addition of iodin, is treated with sodium sulphite solution. It was also noted that the more water used in dissolving the phenacetin and caffein mixture, the more phenacetin would be found along with the caffein in its final determination. The following results will show how the determination varied, due to varying concentrations of the solution, and will show that the results are always high. In each case, phenacetin was demonstrated to be present in what should have been pure caffein. The following are the results:

	Weight of Caffein used.	Weight of Caffein (and phenacetin) found.
I.	.1319	.1473
II.	.1000	.1069
III.	.1275	.1504
IV.	.1143	.1487
V.	.1119	.1382

This work is being continued with the end in view of working out a satisfactory method of separating phenacetin and caffein. The results of this endeavor to find an efficient method will be published in a future issue of THE JOURNAL. [From the chemist's report.]

4. THE JOURNAL A. M. A., July 1, 1905, p. 55.

5. The packages labeled "Antikamnia and Quinin Tablets," both the one purchased in England and that found on the American market give the weight of each tablet as 5 grains, and the proportion of the ingredients as "2.5 gr. Antikamnia; 2.5 gr. Quinin bisulph." The preparation on the American market, however, bears an added label to conform to the Food and Drugs Act, similar to the label found on the "Antikamnia Powdered." Qualitative analyses showed the presence of acetanilid in the "Antikamnia and Quinin Tablets" purchased in England and consequently the analysis of this preparation was carried out according to the method used in examining the "Antikamnia Powdered" obtained from England. It was found that acetanilid and caffein were present in the following proportions: Acetanilid 34.48 per cent, Caffein 2.80 per cent. In the residual solution, left after extracting acetanilid and caffein, quinin was determined as follows: The solution was made alkaline with ammonium hydroxid and then extracted with chloroform. The chloroform solution was allowed to evaporate and the resulting residue was dried at 90° and weighed. From this result the content of quinin bisulphate in the specimen was calculated and found to be 52.46 per cent. Further investigation showed that sodium bicarbonate, which would naturally be expected to be present, was absent, and in its place starch had been substituted to the extent of 10.26 per cent. (by difference).

In the "Antikamnia and Quinin Tablets" as sold in the United States, it was found by qualitative tests that acetanilid had been replaced by acetphenetidin (phenacetin), and accordingly an analysis was made to determine the phenacetin, caffein and quinin content of this preparation. For determining phenacetin and caffein the method already described (Footnote 3) was used, and for the determination of quinin the method given above for "Antikamnia and Quinin Tablets" from England was used. Again in this preparation—as in that bought in England—starch had been substituted for sodium bicarbonate. The result of this analysis showed the presence of: Phenacetin 36.46 per cent., Caffein, 4.11 per cent., Quinin bisulphate, 53.63 per cent., and 5.80 per cent starch (by difference). [From the chemist's report.]

cept that the brand found on the American market contains acetphenetidin in place of the acetanilid which still persists in the product sold in Great Britain.

While for a long time this nostrum was presumably to be advertised to physicians only, it is now openly advertised directly to the public by samples, and circulars sent broadcast through the mails.

COMMENTS.

The above are brief statements of bald facts. Two of these facts should be emphasized: (1) When the Food and Drugs Act went into force, January, 1907, the manufacturers of Antikamnia, rather than acknowledge the truth of the past—we can imagine no other reason—materially and radically changed the composition of their preparation, and did this without notifying the medical profession or intimating in any way, so far as we can learn, that such a change had been made. We have no doubt they believed they had a right to do as they pleased with their own; that it was nobody's business but theirs what they did with their own preparation, or how they changed it. As they never had told physicians what it contained, there was no reason why they should do so now. This is logical, and we can not blame the manufacturers so long as the medical profession is willing to be humbugged. (2) For the same reason, we presume, they claim that they have a right to continue to use acetanilid in the product for the foreign market. The Food and Drugs Act applies only to the United States, of course, and acetanilid being cheaper, why not use it? What is the difference if one is more dangerous than the other? The fact that the Antikamnia sold abroad differs from that sold in this country some may say is of no special interest to us. Still this fact is worth noting: The dose of acetphenetidin—phenacetin—(7½ grains) is nearly double that of acetanilid (4 grains); one becoming accustomed to a certain dosage of the nostrum as sold in this country might, while abroad, unwittingly be led to take a double dose of acetanilid.

When the Council on Pharmacy and Chemistry was first established, some proprietary manufacturers indignantly declared that there was no necessity for the investigation of their products. With one voice they insisted that "the honor and reputation of their firms was sufficient guarantee" of the integrity of their products. It is sad to relate that their position was endorsed by several of our supposedly reputable medical journals whose editors were so imposed on that they indignantly refused to believe that there could be any deception or dishonesty in the methods of the firms which had for so many years advertised in and (incidentally) supported their journals.

We leave our readers to draw further conclusions from the above facts. Possibly the opinion of the Antikamnia company is correct; possibly they have a right to misrepresent, as we have shown they have misrepresented. Can it be possible that some of our prominent medical journals, edited and supported by members of our profession, believe this and are willing to continue as co-partners and profit by fraud and deception?

Correspondence

Sudden Deaths Following the Use of Diphtheria Antitoxin.

[The attention of the Surgeon-General of the U. S. Public Health and Marine-Hospital Service was called to the three deaths* following the use of diphtheria antitoxin, and he was asked if any investigation of the antitoxin used had been made by the Service. The following is Surgeon-General Wyman's reply]:

WASHINGTON, D. C., Jan. 30, 1908.

To the Editor:—I desire to acknowledge the receipt of your letter of Jannuary 25, referring to recent reports appearing in THE JOURNAL of fatalities following the use of diphtheria antitoxin, inclosing report of another case from Dr. E. L. Boone, New Martinsville, W. Va., and requesting to be informed if the service has made any investigations in relation thereto.

In reply, I have to state that samples of serum of the same laboratory number and issued by the same manufacturer were received from Dr. Wiley of Norristown, Pa., who reported the fatal case in THE JOURNAL, Jan. 4, 1908. These samples were examined in the Hygienic Laboratory and found to be sterile, so far as bacterial contamination is concerned, and further, to contain no toxic substance for guinea-pigs or mice. Some of this serum was injected into guinea-pigs and subcutaneously into mice. Steps have also been taken to secure samples of the serum used in the cases reported from Cuba, N. Y., and New Martinsville, W. Va.

It is evident, from the examinations made thus far, that this serum was not contaminated, and this case in all probability is an example in man of hypersusceptibility to horse serum which can easily be induced in animals by spaced injections of horse serum. The phenomenon of hypersusceptibility has received very careful study in the Hygienic Laboratory during the past two years in connection with the examination of serums provided for in the law of July 1, 1902, and it can positively be stated that diphtheria antitoxin plays no part in the poisonous action of horse serum, and is itself harmless. The detailed results of these investigations have been published in Hygienic Laboratory Bulletins Nos. 29 and 36.

The symptoms following spaced injections of horse serum in animals are very characteristic, and indicate that the poisonous principle has a powerful influence on the respiratory centers. Paralysis of the respiratory centers is shown by the fact that respiration in fatal cases ceases long before the heart stops beating. Similar symptoms were reported in the human cases under consideration, and the patients were in all probability sensitized, in some as yet unknown way to horse serum. It is significant that two of the patients reported were afflicted with asthma, which disease is regarded as a neurosis. The results in these cases, and one other, of which the bureau has knowledge, may furnish important clinical information to the effect that antitoxin should not be used, or only with caution, in persons with asthma, or subject to asthmatic attacks.

WALTER WYMAN, Surgeon-General.

* See also editorial on the same subject.

Medical Journals and Nostrum Advertising.

WARREN, PA., Jan. 18 1908.

To the Editor:—I canceled my subscription to the *American Journal of the Medical Sciences* because of the advertisement of Antikamnia and other fraudulent preparations, and Messrs. Lea & Co. sent me the following significant reply:

LEA BROTHERS & CO.,

PHILADELPHIA, Dec. 24, 1907.

Dr. M. V. Ball, Warren, Pa.

Dear Sir:

The insertion of the advertisement to which you take exception does not, we believe, interfere in any shape, form or manner with the quality of the text pages of the *American Journal of the Medical Sciences*, and it would seem to us a pity that you should deprive yourself of the continued services of an old friend, simply because you dislike the methods of a single advertiser. It was not so long ago since the most ethical of the weekly medical journals gladly inserted this advertisement and others of its kind, and as we have had a contract with the advertiser in question for many years, we do not think ourselves more justified to-day in declining to accept the advertisement than we did when we first made a contract with our friend.

In accordance with your instructions we have stopped your subscription, but we confess that we do so with the utmost reluctance, and we venture to hope that you will regard the matter from a more philosophical light and instruct us to continue to send you a journal for which you have, no doubt, a very high esteem. Yours faithfully,

LEA BROTHERS & CO.

In other words, the publishers of this highly reputable journal have learned nothing in the last three years from all that

has been done against fraud advertising and take their stand with the nostrum vendors, who have done more to cast discredit on the medical profession than all the other foes put together. Why be indignant with religious papers that proclaim the virtue of this or that remedy when the high price and high quality medical journals are filled with fraudulent advertisements? Until the leaders disassociate themselves from every journal that can see no harm or wrong in admitting nostrums to its advertising columns, we can not expect that the great majority of physicians will be regarded with any respect by the public. The "great majority," perhaps, will have to act first and compel their leaders to follow in the campaign against sham and hypocrisy in our own ranks.

The proprietors of Antikamnia are now advertising extensively to the laity through the U. S. mail and in such a manner as to deceive the public. They declare Antikamnia contains no acetanilid or opium, and is harmless and produces no habit. They admit it contains phenacetin (acetphenetidin) which, according to every observer, is just as dangerous as acetanilid and has the same contraindications. They advise Antikamnia and Codein in over one-half of the diseases mentioned and yet word their advertising so as to lead the laity to believe that no opiates are in their preparations. Samples are sent through the mail. M. V. BALL.

[COMMENT:—The owners and publishers of the *American Journal of the Medical Sciences* are laymen. Naturally, they are not particularly interested in medical ethics; they see the question only from the layman's viewpoint. Are they, therefore, particularly to blame for admitting nostrums to their advertising pages? If the reader does not object, the publishers may feel justified in admitting such advertisements as these, which are among those to be found in the January number of the *American Journal of the Medical Sciences:* Bovinine, Seng, Chionia, Peacock's Bromids, Cactina, Antiphlogistine, Antikamnia, Listerine, Bromidia, Echthol, Iodia and Papine. If, however, a sufficient number of readers will do as our correspondent has done, or will simply write to the publishers and let them understand how the physicians look at the matter, undoubtedly there will be a change. This particular journal stands as high as any in the country; it should be and is subscribed for by the "leaders." Unfortunately, the large percentage of this class, knowing the fraudulent character of many advertisements, pass them over with contempt. They do not realize that their silence is taken by the publisher as a quasi endorsement or at least as indicating that they do not object to such advertisements. Meritorious medical publications should be liberally supported. They are well worth the subscription price asked for them, but, on the other hand, the publisher should not be allowed to deliver ripe and rotten fruit in the same basket.—ED.]

Dangers of Local Anesthesia.

RIDGEWAY, MO., Jan. 29, 1908.

To the Editor:—Within the last ten days I have had four cases of infected finger, in which the finger had been lanced under the use of some freezing agent, and desire to call attention to the facts that such agents should be used with care and that there is danger connected with their use, the claims of the promoters to the contrary notwithstanding.

There was refrigeration to actual necrosis of tissue, varying from a narrow circle to entire width of the integument over the second phalanx of the index finger; while the tissues underneath were completely necrosed to the bone, from 5 mm. to 2 cm. in diameter.

Being frozen and thus devitalized, unless removed, the tissues are in a most suitable condition for further bad results. The treatment is self-evident.

In infected fingers, as generally seen, I find it better to distract a patient's attention by the use of constriction, thereby availing myself of the natural pressure intensified, which is lost under the other method. Immediately after incision the band is removed, the attention being still farther distracted, and the rest of the treatment is easy.

JAMES H. MORROWAY.

Medical Economics

Optometry Bill in Massachusetts.

A bill "regulating the practice of optometry" has been introduced into the Massachusetts legislature and strenuous efforts are being made to secure the endorsement of the medical profession. It is claimed that the object of the bill is to protect the public and to prevent ignorant and unscrupulous men from practicing "optometry." The Massachusetts Medical Society and the Boston Homeopathic Medical Society, through their legislative committees, have unanimously voted to oppose the bill. If the Massachusetts medical practice act does not sufficiently cover the point, an amendment should be introduced, authorizing the State Board of Medical Examiners to examine and license opticians. There is no justification, reason, or demand for such a separate board.

In this connection Dr. John C. Bossidy of Boston, in the *Boston Medical and Surgical Journal*, January 16, sets forth the dangers of such legislation in an article entitled, "The Optometrist. Does He Preach and Practice Medicine?" Dr. Bossidy shows from quotations from lectures, circulars and articles by members of the Massachusetts Optical Society, the New England Association of Physicians, etc., that those who call themselves "optometrists" claim to be able without the use of drugs to prescribe for the correction of defects of vision, to examine the cornea and retina with the ophthalmoscope and oblique illumination, and to diagnose disease therefrom, and that they claim knowledge in diseases of the eye superior to that possessed by the physician.

This entire movement, which has cropped out in a number of states, is simply a part of the constant effort made by unqualified and incompetent individuals to secure the same recognition and standing as that granted to the medical profession, without possessing the training required of legally qualified physicians. The solution of all of these difficulties is to be found in a single board and a single standard, fitness to be determined by a purely scientific examination divested of al suspicion of sectarianism. The bill should be defeated.

Legislation on Vital Statistics.

Reports from states in which the legislatures are now in session show that bills providing for a system of vital statistic registration have been introduced in Virginia and Ohio. These bills are in accord with the movement for uniform legislation on this subject, and have the approval of the United States Census Department. While they were drawn up before the Conference on Medical Legislation met, they are, in the main, in accord with the recommendations of the conference on this important subject.

It is hoped that these two laws will be enacted, and that the coming year will see a decided advance along the line of uniform state legislation for vital statistics. All physicians in these states, especially members of county and state societies, should aid the passage of these bills in every way.

Proposed Medical Legislation in Ohio.

Dr. R. B. Newcombe of Cleveland, in an article in the *Cleveland Medical Journal* for January, outlines the proposed legislation for the coming session of the legislature in that state and urges the cooperation of all physicians. Legislation planned includes a bill regulating the manufacture and sale of proprietary medicines within the state, securing the full benefits of the provisions of the national Food and Drugs Act; a bill creating the position of county medical officer of health; a bill amending the law regarding criminal abortion; a bill forbidding the advertisement in the public press and elsewhere of cures of venereal diseases and of flagrant medical frauds; a bill providing for the registration of vital statistics; a bill re-establishing a local board of health for cities under the merit system, and a bill providing for the appointment of all public medical officers from nominations made by the state and county medical societies.

While it is hardly to be expected that all these measures will be adopted, it is hoped that the principal ones will become laws. It is only in recent years that measures of interest to

physicians have been favorably considered by the legislature. Dr. Newcombe emphasizes the value of proper legislation to the public as well as the unselfish motives of the profession in advocating it. He also points out that the proposed laws are for the public good and that opposition is to be looked for from those whose selfish interests are imperiled.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fifth Month.

THIRD WEEKLY MEETING.

Tuberculosis of Bone.

Etiology: Tubercle bacillus, culture and identification. Mode of entrance into bone.

Pathologic Anatomy: (a) Acute tuberculosis of bone, (b) limited tuberculous deposits, (c) tuberculous osteomyelitis, (d) tuberculous periostitis.

Symptoms: Clinical history of (a) tuberculous osteomyelitis, (b) tuberculous disease of epiphysis or diaphysis.

Treatment: Diagnosis and treatment of tuberculous disease (a) without abscess, (b) with abscess, (c) with sinuses.

Syphilis of Bone.

When may it occur? Probable pathology of secondary stage.

Symptoms: Clinical history and diagnosis in secondary, tertiary, inherited syphilis.

Osteomalacia.

Pathology. Clinical significance.

Rickets.

Theories of causation. Pathologic changes.

Symptoms: Clinical history. Physical signs.

Treatment: Medicinal. Surgical importance of rickets.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

DURATION OF HYPODERMIC TREATMENT OF SYPHILIS.

———, OHIO, Jan. 13, 1908.

To the Editor:—How long should one persist in the hypodermic method of treating a case of lues? I am using bichlorid of mercury weekly. L.

ANSWER.—There is no definite period during which one should persist in the hypodermic method of treating a case of syphilis. If there is reason for the use of this method it should be kept up as long as the indications exist. Some enthusiastic supporters of the injection method of treating syphilis advocate a course of twenty to forty injections of a soluble salt—like mercury—given daily or every second day, and call this a cure for syphilis. Such a treatment is no more a cure than thirty rubs with blue ointment or thirty vigorous treatments by the mouth. As a rule, except in certain parts of continental Europe, the injection treatment of syphilis is reserved for emergencies. Under those circumstances it is continued until the desired result from its use is attained and the patients go back to the use of mercury in other forms, usually by the mouth. Undoubtedly, intermittent periods of injection treatment should not be allowed to take the place of the well-established persistent treatment.

TREATMENT OF PSORIASIS.

CLEVELAND, OHIO, Jan. 13, 1908.

To the Editor:—I have a case of psoriasis in a boy of 10 years. This disappears under continued use of chrysarobin and arsenic. Arsenic alone has no effect. As soon as treatment is dropped, the eruption reappears. Can you suggest in what particular I have fallen short? F. W. L.

ANSWER.—All that can be done by treatment in psoriasis is to clean off the eruption, and nothing is better for that purpose than chrysarobin. If arsenic is used it should not be used longer than a few weeks; and it is much more effective in the first attacks than in later outbreaks of psoriasis. Usually after the use of chrysarobin the skin remains clear for at least several weeks, although at times it returns about as quickly as the effects of chrysarobin have worn off. Possibly the reason the eruption returns so promptly in your case is that the use of chrysarobin is not continued until the disease has entirely disappeared. No better method of treatment than you indicate can be suggested in psoriasis.

FORMALIN FOR SWEATING.

MINNEAPOLIS, Jan. 21, 1908.

To the Editor:—I notice in THE JOURNAL, Dec. 28, 1907, an inquiry about formalin for sweating. The following prescription works very well, and is used by many of the best men in Vienna and Berlin:

℞ Formalin ..... 5 to 10
Glycerin 5
Alcohol 100

It should be used only a few times, as it hardens the skin. It is supposed to act on the coils of the sweat-glands direct, the formalin vapor inhibiting the secretion. S. E. SWEITZER.

BOUGARD'S PASTE.

A correspondent sends us another formula for this preparation, referred to in THE JOURNAL, Feb. 1, 1908. The exact source, he says, is unknown:

Arsenic	1	gr. xv
Bichlorid of mercury	06	gr. i
Cinnabar		
Chlorid of ammonia (sal ammoniac), āā	4	3i
Wheat flour,		
Starch, āā	60	℥ii
Saturated solution of chlorid of zinc sufficient to make a thin paste.		

To make the saturated solution use: Chlorid of zinc, 3 ounces (90 c.c.): water, 1 ounce (30 c.c.).

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers for the week ending Feb. 1, 1908:

Juenemann, George F., asst.-surgeon, on arrival at San Francisco, will proceed to Fort McDowell, Cal., for duty at the depot of recruits and casuals.

Baker, Frank C., asst.-surgeon, on arrival at San Francisco, will proceed to Fort Oglethorpe, Ga., for duty.

Shortlidge, E. D., asst.-surgeon, on arrival at San Francisco, will proceed to Fort Du Pont, Del., for duty.

Hallock, H. M., surgeon, having been found incapacitated for active service, is retired to take effect March 20, 1908; granted leave of absence to that date.

Palmer, F. W., asst.-surgeon, leave of absence extended twenty days.

Richards, R. L., asst.-surgeon, granted leave of absence to Feb. 15, 1908.

Kieffer, Charles F., surgeon, relieved from further duty with the Army of Cuban Pacification.

Cole, Clarence LeR., asst.-surgeon, granted three months' leave of absence, to take effect when relieved from duty at Jefferson Barracks, Mo.

Kieffer, Charles F., surgeon, ordered to report in person to Brig.-Gen. Frederick Funston, president of an army retiring board at San Francisco, at such time as he may designate for examination by the board.

Culler, Robert M., asst.-surgeon, leave of absence extended one month.

Reynolds, F. P., surgeon, granted leave of absence for four months, with permission to go beyond the sea.

George, William R. S., contract surgeon, left Fort Greble, R. I., on leave of absence for three months, twenty-seven days.

Kleruliff, H., Newton, contract surgeon, granted an extension of one month, fifteen days, to his leave of absence.

Walker, Thomas C., contract surgeon, relieved from duty at Fort Oglethorpe, Ga., ordered to Fort Leavenworth, Kans., for duty with troops to San Francisco, and to proceed thence by first available transport to Philippine service.

Bayley, Edmund W., contract surgeon, ordered from Vancouver Barracks, Wash., to Fort William H. Seward, Alaska, for temporary duty.

Navy Changes.

Changes in the medical corps, U. S. Navy, for the week ending Feb. 1, 1908:

Russell, A. C. H., medical inspector, commissioned medical inspector from May 7, 1907.

Biddle, C., medical inspector, commissioned medical inspector from June 16, 1907.

Porter, F. E., passed asst.-surgeon, commissioned passed asst.-surgeon from June 7, 1907.

Dessez, P. T., passed asst.-surgeon, commissioned passed asst.-surgeon from June 10, 1907.

McDonell, W. L., passed asst.-surgeon, commissioned passed asst.-surgeon from Sept. 19, 1907.

Vickery, E. A., passed asst.-surgeon, commissioned passed asst.-surgeon from Oct. 11, 1907.

Mackenzie, E. G., asst.-surgeon, ordered to the naval hospital, New York.

Schmidt, L. M., asst.-surgeon, ordered to the naval hospital, Annapolis, Md.

Whiteside L. C., acting asst.-surgeon, ordered to the naval hospital, Newport, R. I.

Brownell, C. D., surgeon, detached from the naval training station, Newport, R. I., and ordered to the *Mississippi*.

Donelson, M., asst.-surgeon, detached from the *Stringham* and ordered to the *Porter*.

Sellers, F. E., asst.-surgeon, detached from the naval hospital, Annapolis, Md., and ordered to the Naval Academy.

Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Jan. 22, 1908:

Brooks, S. D., surgeon, granted leave of absence for 14 days on account of sickness, from Jan. 22, 1908.

Cofer, L. E., P. A. surgeon, relieved from duty at Seattle, Wash., and directed to proceed to Honolulu, T. H., assuming the duties of chief quarantine officer at that port.

Lavinder, C. H., P. A. surgeon, leave of absence granted for one month from January 12, amended so as to be effective Jan. 14, 1908.

White, M. J., P. A. surgeon, relieved from duty at Seattle, Wash., and directed to proceed to Detroit, reporting to the medical officer in command for duty.

Glover, M. W., P. A. surgeon, relieved from special temporary duty at Seattle, Wash., and directed to assume charge of the service at that port.

de Valin, H., asst.-surgeon, leave of absence granted for 30 days from Dec. 16, 1907, amended to read for 29 days only.

Fogarty, J. N., acting asst.-surgeon, granted leave of absence for 30 days from Jan. 15, 1908.

Keatley, H. W., acting asst.-surgeon, granted leave of absence for one day, under Paragraph 210 Service Regulations.

BOARD CONVENED.

A board of medical officers was convened to meet in Baltimore, 10 a. m., Jan. 20, 1908, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the board: P. A. Surgeon J. T. Burkhalter, chairman, and Acting Asst.-Surgeon J. LaB. Ward, recorder.

List of changes of stations and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Jan. 29, 1908:

Stoner, G. W., surgeon, granted leave of absence for 6 days, from Jan. 16, 1908, under paragraph 189, Service Regulations.

Young, G. B., surgeon, detailed to represent the service at the meeting of the fourth annual conference of the Council on Medical Education, American Medical Association, to be held at Chicago, April 13, 1908.

Mathewson, H. S., passed asst.-surgeon, granted leave of absence for 7 days, from Jan. 31, 1908.

Lloyd, B. J., passed asst.-surgeon, granted leave of absence for 7 days, from Dec. 21, 1907, on account of sickness.

Francis, Edward, passed asst.-surgeon, granted leave of absence for 7 days.

McCoy, G. W., passed asst.-surgeon, directed to proceed to Sussex County, Va., via Richmond, Va., for special temporary duty; on completion of which to rejoin his station at the Hygienic Laboratory.

Robertson, H. McG., passed asst.-surgeon, relieved from duty at Reedy Island Quarantine Station and directed to proceed to Tampa Bay Quarantine Station, assuming command of the service.

Manning, H. M., asst.-surgeon, relieved from duty in the Philippine Islands and directed to return to the states, reporting his arrival in San Francisco by wire.

Bryan, W. M., asst.-surgeon, granted leave of absence for 7 days, to be taken en route between Savannah, Ga., and New Orleans.

Brooks, S. P., acting asst.-surgeon, granted leave of absence for 7 days, from Jan. 25, 1908, under paragraph 210, Service Regulations.

Rodman, J. C., acting asst.-surgeon, granted leave of absence for 4 days, from Jan. 28, 1908.

Thornton, M. J., acting asst.-surgeon, granted leave of absence for 1 day, on account of sickness.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Jan. 31, 1908:

SMALLPOX—UNITED STATES.

California: Los Angeles, Jan. 4-11, 15 cases.
Illinois: Chicago, Jan. 11-18, 3 cases; Springfield, Jan. 9-16, 14 cases.
Indiana: South Bend, Jan. 11-18, 1 case.
Kansas: Kansas City, Jan. 11-18, 2 cases; Topeka, Jan. 4-11, 3 cases.
Kentucky: Covington, Jan. 11-18, 4 cases.
Louisiana: New Orleans, Jan. 11-18, 8 cases.
Massachusetts: Fall River, Jan. 11-18, 4 cases, 1 death.
Michigan: Detroit, Jan. 11-18, 1 case.
Minnesota: Winona, Jan. 4-18, 3 cases.
Missouri: St. Joseph, Dec. 7-14, 1 case; Jan. 4-11, 4 cases.
North Carolina: Greensboro, Jan. 11-18, 1 case.
Ohio: Cincinnati, Dec. 31-Jan. 7, 3 cases.
Oregon: Portland, Jan. 4-11, 5 cases.
Tennessee: Nashville, Jan. 11-18, 15 cases.
Texas: Fort Worth, Dec. 1-31, 45 cases.
Washington: Spokane, Nov. 23-Dec. 7, 5 cases, 1 death; Jan. 4-11, 6 cases.

SMALLPOX—FOREIGN.

Brazil: Rio de Janeiro, Dec. 16-23, 24 cases, 14 deaths.
Canada: Winnipeg, Jan. 4-11, 9 cases.
China: Hongkong, Nov. 23-30, 1 case, 1 death.
Guayaquil: Ecuador, Dec. 21-Jan. 4, 6 deaths.
France: Paris, Dec. 28-Jan. 4, 6 cases, 1 death.
Great Britain: Leith, Dec. 28-Jan. 4, 1 death.
India: Bombay, Dec. 17-24, 6 deaths; Madras, Dec. 14-20, 1 death.
Italy: General, Dec. 26-Jan. 2, 77 cases; Catania, Dec. 26-Jan. 2, 1 death.
Japan: Kobe, Dec. 14-21, 202, cases, 36 deaths.
Mexico: Aguas Calientes, Jan. 5-12, 4 deaths.
Peru: Lima, Dec. 11, 18 cases in hospital.
Spain: Barcelona, Dec. 21-31, 3 deaths; Denia, Dec. 28-Jan. 4, 2 deaths; Valencia, Dec. 29-Jan. 5, 46 cases, 3 deaths; Vigo, Dec. 28-Jan. 4, present.

CHOLERA—INSULAR.

Philippine Islands: Manila, Dec. 7-14, 4 cases, 3 deaths.

CHOLERA—FOREIGN.

India: Bombay, Dec. 17-24, 1 death; Madras, Dec. 14-20, 4 deaths; Rangoon, Dec. 7-14, 15 deaths.
Japan: Osaka, Dec. 14-21, 2 cases, 1 death.

YELLOW FEVER.

Cuba: Santa Clara Province, Cienfuegos, vicinity, Jan. 23-25, 2 cases.
Ecuador: Guayaquil, Dec. 21-Jan. 4, 1 death.

PLAGUE.

Brazil: Rio de Janeiro, Dec. 16-23, 3 cases, 4 deaths.
Great Britain: Glasgow, Aug. 17-31, 1 death.
India: Bombay, Dec. 17-24, 1 death; Rangoon, Dec. 7-14, 6 deaths.
Japan: Osaka, Dec. 14-21, 28 cases, 28 deaths.
Peru: Callao, Dec. 14-21, 1 case; Catacaos, Dec. 14-21, 3 cases; Jequetepeque, Dec. 14-21, 1 death; Lima, Dec. 14-21, 5 cases, 2 deaths; Paita, Dec. 14-21, 4 cases, 4 deaths; Piura, Dec. 2, 3 cases, 1 death; Trujillo, Dec. 2, 8 cases, 6 deaths.

Association News

NEW MEMBERS.

List of new members of the American Medical Association for the month of January, 1908:

ALABAMA.

Leland, Joseph, Tuscaloosa.
McDaniel, J. C., Gaston.
White, M. S., Hamilton.

ARIZONA.

Linn, W. I., Prescott.

ARKANSAS.

Bush, J. W., Hot Springs.
Connell, W. H., Hot Springs.
Meek, J. W., Camden.
Palmer, J. T., Star City.
Russwurm, S. C., La Grange.

CALIFORNIA.

Alexander, P. C., San Francisco.
Ash, Rachel L., San Francisco.
Bangs, F. H., San Jose.
Beattie, J. I., Santa Clara.
Castelhun, Paul, San Francisco.
Chapman, R. B., Los Angeles.
Clark, J. W., Santa Rosa.
Clark, V. G., San Diego.
Coleman, Chas. L., San Leandro.
Coleman, Geo. L., San Leandro.
Cosgrave, Millicent, San Francisco.
Cothran, A. L., San Jose.
Cox, H. M., San Luis Obispo.
Creamer, M. S., Los Angeles.
De Loss, Herbert, Merced.
Dempsey, R. B., Vallejo.
Doherty, S. McL., Napa.
Enloe, N. T., Chico.
Fabre-Rajotte, E. C., Lincoln.
Fairchild, C. H., Winters.
Gates, M. J., Santa Cruz.
Goodridge, Hannah, San Jose.
Haber, W. J., San Francisco.
Loos, H. C., San Diego.
McLean, D. L., Sacramento.
Millar, C. F., San Francisco.
Miller, Guy, Watsonville.
Miller, U. G., Los Angeles.
Moore, A. W., Los Angeles.
Newton, F. C., St. Helena.
Sampson, May H., South Berkeley.
Shumate, T. E., San Francisco.
Stice, T. H., Napa.
Sweeney, G. J., San Francisco.
Thompson, C. H., Santa Rosa.
Trueman, J. E., San Jose.
Turner, E. C., Sacramento.
Ugai, Kinji, Sacramento.
Wiley, E. H., Los Angeles.
Wislocki, E. J., San Jose.
Wood, F. L., Long Beach.
Zimmermann, A. F., Los Angeles.
Zumwalt, F. H., San Francisco.

COLORADO.

Acheson, George, Idaho Springs.
Burton, F. A., Denver.
Ferris, C. A., Georgetown.
Joslyn, S. A., Loveland.
Parker, H. P., Nunn.
Patterson, W. O., Pueblo.
Peters, S. W., Colorado Springs.
Sickenberger, J. U. Ouray.
Thompson, W. E., Greeley.
Whitcomb, O. J., LaJunta.

CONNECTICUT.

Bowman, J. E., Greenwich.
Ford, Alice P., New Haven.
Hayes, J. D., Torrington.
Lane, J. E., New Haven.
Staub, J. H., Stamford.

DELAWARE.

Rutherford, J. B., Wilmington.

DISTRICT OF COLUMBIA.

Battle, L. J., Washington.
Bennett, A. B., Jr., Washington.
Brecht, N. Du V., Washington.
Hilton, J. F., Washington.
Mason, W. B., Washington.
Miner, F. H., Washington.
Richards, Alfred, Washington.
Thompson, E. D., Washington.

FLORIDA.

Halton, Joseph, Sarasota.
Peabody, J. D., St. Petersburg.
Speil, J. C., Titusville.
Stewart, E. L., Daytona.

GEORGIA.

Griffin, Archie, Valdosta.
Moseley, R. C., Bolingbroke.
Whipple, R. L., Cochran.

ILLINOIS.

Ayling, E. K., Tonica.
Bauer, J. A., Germantown.
Bennett, O. P., Washington.
Blackburn, M. H., Princeton.
Bridges, W. T., Stonington.
Browning, A. L., Hermon.
Burke, C. O., Atlanta.
Burns, Howard, Carrollton.
Cleff, Oscar, Chicago.
Cline, H. X., Marion.
Cook, E. A., Upper Alton.
Cook, E. P., Mendota.
Cory, E. V., Chicago.
Coss, O. A., Saunemon.
Davidson, T. W., Springfield.
Davis, H. W., Alton.
Denney, J. A., Chicago.
Ditto, B. L., Gladstone.
Doty, C. M., Edgewood.
Downey, W. S., Chicago.
Drew, T. B., Oswego.
Enos, J. W., Jerseyville.
Ericson, C. E., Quincy.
Ewing, F. M., Lincoln.
Fahrney, B. E., La Salle.
Farthing, J. R., Marine.
Fikenscher, Otto, Sibley.
Fildes, V. S., Parkersburg.
Fleming, G. J., Chicago.
Fletcher, H. H., Winchester.
Francis, H. M., Chicago.
Garner, W. A., Clayton.
Garraghan, E. F., Chicago.
Gay, F. S., Rockport.
Goldberg, D. D., Maryville.
Gould, G. S., Lostant.
Greaves, W. W., La Salle.
Gregory, C. S., Findlay.
Groves, W. D., Ursa.
Heinen, J. H., Chicago.
Hill, F. M., Chicago.
Hill, M. M., Taylorville.
Olsen, Martin I., Chicago.

Jacobs, W. F., Chicago.
Keith, L. D., Anna.
Keller, Wm., Princeton.
Kelly, B., Ferris.
Kettlestrings, F. W., Oak Park.
Kolb, F. K., Apple River.
Lewis, G. C., Fairbury.
Libberton, R. C., Chicago.
Lindsey, L. N., Forsyth.
Marshall, J. R., Sheffield.
Marvel, W. J., Chicago.
Mercer, W. E., Mt. Carmel.
McCoy, E. E., Flanagan.
McIlvaine, T. M., Peoria.
McMackin, C. C. Roanoke.
Miller, G. W., Woodson.
Milligan, G. W., Edinburg.
Moorehead, F. B., Chicago.
Mosher, B. D., Sheridan.
Norris, F. A., Jacksonville.
Palmer, E. E., Ottawa.
Pearson, Norman, Pontiac.
Peters, D. R., Timewell.
Portis, M. M., Chicago.
Powers, G. J., Streator.
Rhodes, W. R., Toledo.
Richardson, W. D., Centralia.
Rummell, A. S., Depue.
Sadler, W. S., Chicago.
Smith, Frances A. P., Chicago Heights.
Szymanski, Julius, Chicago.
Waggoner, W. F., Carrollton.
Waters, P. S., Brookport.
Wells, R. P., Pleasant Hill.
Wickstrom, A. M., Chicago.
Winter, H. A., Saybrook.
Wyatt, J. T., Eureka.
Yeck, C. W., Avenzville.

INDIANA.

Ansley, Robt., Indiana Harbor.
Botkin, C. L., Farmland.
Bulla, M. S., Gas City.
Cameron, V. V., Marion.
Clark, S. R., Littles.
Davidson, E. C., Lafayette.
Davis, J. Q., Indianapolis.
Foreman, W. H., Indianapolis.
Funk, Austin, Jeffersonville.
Funk, C. C., New Albany.
Gillum, J. R., Terre Haute.
Henning, Carl, Hanover.
Hoover, L., Decker.
Huff, O. N., Fountain City.
Keene, T. V., Indianapolis.
Leckrone, Ira, Silver Lake.
Macer, E. C., Evansville.
Slocum, Stewart, Fortville.
Stephenson, L. E., Tell City.
Wedding, M. F., Rome.
Zaring, E. T., Reelsville.

IOWA.

Buck, E. M., Montrose.
Carpenter, O. O., Sully.
Davies, J. E., Oxford Junction.
Edgar, J. C. Holstein.
Glynn, J. M., Vail.
Harris, E. E., Tabor.
Heard, Mary K., Iowa City.
Jackson, T. R., Hocking.
Murchison, Kenneth, Hamburg.
Shahan, R. F. Eddyville.

KANSAS.

Elder, M. D., Piqua.
Gaston, P. K., Pratt.
Hawkins, G. M., Dexter.
Johnson, J. W., Formoso.
Jones, A. D., Wichita.
Kerr, C. C., Perry.
Nelson, I. D., Attica.
Phares, W. A., Wichita.
Roberts, M. C., Hutchinson.
Webber, G. E., Morland.
Wyant, O. B., Winfield.

KENTUCKY.

Arnold, A. M., Jackson.
Carman, W. L., Paint Lick.
Carter, R. L., Louisville.
Chrisman, J. H., Owenton.
Cornelison, B., Salt Lick.
Depp, C. G., Hiseville.
Early, J. L., Knottsville.
Filiatreau, R. N., Knottsville.
Hardwick, G. A., Livia.
Hancock, C. L., Skylight.
Harned, H. S., Boston.
Jasper, H. C., Richmond.
Jones, I. W., Owingsville.
Lillard, G. D., Lawrenceburg.
Morris, H. T., Greenup.
Morris, W. E., Shelbyville.
Nisbet, W. K., Earlington.
Purcell, C. E., Paducah.
Shelley, R. A. J., Gap Creek.
Simpson, E. N., Latonia.
Southard, D. B., Mt. Vernon.
Sparks, M. L., Denton.
Strickler, E. J., Elizabethtown.
Thorpe, J. H., Bush Grove.
Wendelken, Charles, Richland.
Williams, J. M., Louisville.

LOUISIANA.

Beyer, G. E., New Orleans.
Cirino, J. W., New Orleans.
Coney, W. C., Glade.
Fisher, A. E., Doyline.
Self, C. C., Barham.
Upton, G. H., New Orleans.

MAINE.

Larochelle, J. R., Biddeford.

MARYLAND.

Bennett, R. A., Riverdale.
Bradfute, C. S., Mt. Rainier.
Homer, H. L., Rider.

MASSACHUSETTS.

Atwood, C. A., Taunton.
Belden, A. M., Northampton.
Clark, N. H., Boston.
Clark, W. I., Jr., Worcester.
Coriat, I. H., Boston.
Dutton, J. M., Westfield.
Elder, F. O., Haverhill.
Gross, H. W., Quincy.
Houghton, R. H., East Boston.
Janes, A. P., West Stockbridge.
Kelley, S. W., Woburn.
Little, W. B., Lynn.
Lynch, P. M., Springfield.
Murphy, J. C., Norwood.
Myers, Solomon, Boston.
Potts, J. H., Holyoke.
Raymond, C. S., Northampton.
Rood, L. C., Dorchester.
Sargent, O. F. L., Lawrence.
Sparrow, E. H., Cambridge.
Spear, L. M., Boston.

MICHIGAN.

Abbott, H. V., Shepherd.
Barstow, W. E., St. Louis.
Bracey, L. E., Sheridan.
Brown, Rolph, Ottawa Lake.
Bush, S. G., Chelsea.
Colbath, W. E., Fairfield.
DeFoe, W. A., Otisville.
Dulitz, P. C., Detroit.
Hamilton, J. S. Painesdale.
Hammond, T. W., Akron.
Harris, Elizabeth K., Battle Creek.
Herdman, E. K., Ann Arbor.
High, M. L., Detroit.
Howe, L. A., Breckenridge.
Johnson, Henry, Caseville.
Laughlin, A. L., Woodbury.
Light, S. R., Kalamazoo.
Morris, H. L., Vassar.
Parker, J. W., Grand Blanc.
Schilz, E. A., Grand Ledge.
Solis, Jeanne C., Ann Arbor.
Switzer, H. C., Gaines.
Thompson, J. E., Elkton.
Wilcox, A. E., Clayton.
Williams, E. B., Gallen.
Wittwer, E. A., Auburn.

MINNESOTA.

Cutts, G. A. C., Grove City.
Haessly, S. B., Cannon Falls.
Jacobs, J. C., Spicer.
Johnson, O. V., Sebeka.
Leicht, Oswald, Winona.
Maitland, D. P., Jackson.
Ogden, Emma K., Detroit.
Stolpestad, H. L., Lafayette.

MISSISSIPPI.

Boyd, R. M., Houston.
Burnham, H. M., Escatawpa.
Moore, C. C., Holcomb.
Swayze, O. H., Yazoo City.
Townsend, J. M., Harperville.

MISSOURI.

Chambers, J. Q., Kansas City.
Davis, E. T., Kansas City.
Girdner, W. M., Chillicothe.
Griffin, S. H., Humansville.
Harrison, J. F., Farmington.
Hill, I. E., Hannibal.
Howard, J. W., Kansas City.
Hull, J. R., Monroe City.
McConkey, C. M., Lathrop.
Miller, R. R., Maitland.
Oliver, E. A., Richland.
Overall, T. W., Kansas City.
Powers, Everett, Carthage.
Shelton, W. A., Kansas City.
Tainter, F. S., St. Charles.
Whaley, R. W., Browning.
Woolley, P. V., Kansas City.

MONTANA.

Mahoney, J. J., Billings.
Pease, F. D., Missoula.
Tidyman, G. F., Ennis.

NEBRASKA.

Byrnes, M. R., Crete.
Dickinson, L. E., Rockville.
Ebv. C. D., Leigh.
Mackay, J. H., Norfolk.
McIntyre, B. M., Winside.
Mesropian, Messiah, Edgar.
Mills, Eliza H. B., Kearney.
Welch, Joseph, Storkham.
Wilson, W. H., Lincoln.

NEVADA.

Jennison, J. E., De Lamar.

NEW JERSEY.

Child, F. M., Hoboken.
Garr, C. C., Jersey City.
Gutmann, Benjamin, New Brunswick.
Halsey, L. W., Montclair.
Henry, George, Flemington.
Maneusi-Ungaro, L., Newark.
Newman, E. D., Newark.

NEW MEXICO.

McLandress, G. S., Albuquerque.

NEW YORK.

Alexander, W. T., New York City.
Aranow, Harry, New York City.
Archambault, La Salle, Albany.
Aronson, E. A., New York City.
Ash, R. H., Canastota.
Baker, A. H., Elmira.
Baldwin, Janette, Brooklyn.
Barrows, F. W., Buffalo.
Bentley, Inez A., Rochester.
Betowski, L. S., Waverly.
Bleil, Frederick, New York City.
Bliss, Theodore, Schenectady.
Boese, W. H., New York City.
Branch, F. D., Binghamton.
Brockway, R. O., Brookiyn.
Brodhead, G. L., New York City.
Buell, H. C., Canandaigua.
Bugbee, Alice G., White Plains.
Chilson, R. R., Elmira.
Conway, J. A., Rexville.
Cowles, H. C., Jr., New York City.
Cox, C. N. Brooklyn.
Davis, W. O., New York City.
Dew, I. H., New York City.
Dittrich, E. W., New York City.
Douglas, John, New York City.
Falkner, W. J., Youngstown.
Fassett, E. C., New York City.
Fiske, E. H., Brooklyn.
Ford, W. M., New York City.
de Forest, H. P., New York City.
Forker, F. L., Binghamton.
Fritts, A. S., Binghamton.
Ganster, W. F., Brooklyn.
Genung, L. T., Worcester.
Gluck, Samuel, New York City.
Goodwin, C. E., Weedsport.
Graber, S. S., New York City.
Gulick, L. H., New York City.
Hibbard, J. V., Browne Station.
Howd, Emmott, Troy.
Jones, T. Z., Waterville.
Karach, M. N., New York City.
Kast, L. W., New York City.
Kerr, Le Grand, Brooklyn.
Kingsbury, B. F., Ithaca.
Kinne, William, Brooklyn.
Krueger, Max, Stapleton.
Long, J. H., Brooklyn.
Marion, G. A., Rochester.
Marsh, E. F., Brooklyn.
Moody, A. E., Dickinson Center.
Myers, Lotta W., New York City.
Oatman, L. R., Greenwich.
O'Brien, R. J., Watervliet.
Pafford, F. C., Brooklyn.
Parounagian, M. B., New York City.
Payne, Chas. R., Westport.
Post, G. M., Montour Falls.
Quintard, Edw., New York City.
Ransom, C. C., New York City.
Rayevsky, Charles, Liberty.
Rayhill, J. W., Utica.
Raynor, M. W., Poughkeepsie.
Rich, Charles, Yorktown Heights.
Richman, A. L., Morton.
Ringueberg, E. N. S., Lockport.
Robinson, Mary H., Elmira.
Rood, A. B., Minoa.
Rose, R. H., New York City.
Santoire, H. A., Brooklyn.
Scherer, E. M., Penn Yan.
Staunton, Florence I, Utica.
Steel, G. E., New York City.
Swift, G. M., New York City.
Taylor, J. C., New York City.
Thompson, S. W., Owego.
Tong, G. W., Brooklyn.
Trotter, John, Jr., Troy.
Tully, M. E., New York City.
Tupper, B. E., New York City.
Vander Veer, Albert, Jr., New York City.
Veeder, W. H., Rochester.
Vogeler, W. J., Yonkers.
Walcott, Morgan, New York City.
Walsh, S. J., New York City.
Whiting, G. L., Jasper.
Wilson, W. H., Lestershire.
Wise, Fred, New York City.
Young, G. B., Geneva.

NORTH CAROLINA.

Abernethy, E. A., Chapel Hill.
Saunders, J. H., Everetts.

NORTH DAKOTA.

Harris, C. B., Pembina.
Larson, E. M., Minot.
Mugan, J. J., Langdon.
St. John, F. A., Niagara.
Ditus, C. L., Minot.
Waugh, T. F., Park River.
Willson, H. S., Crystal.
Van Houten, Jacob, Valley City.

OHIO.

Bevington, E. E., New Paris.
Bigler, L., Gettysburg.
Bourn, E. L., Brecksville.
Budd, A. W., Perrysville.
Carson, J. W., Berghoiz.
Cherryholmes, W. K., Hamilton.
Conard, Robert, Blanchester.
Courtright, F. E., Shawtown.
Echelbarger, J. R., Fletcher.
Farber, J. H., Dayton.
Foster, I. C., Steubenville.
Garver, C. V., Lorain.
Gosling, J. A., Louisville.
Hansher, J. F., St. Paris.
Hartzell, J. D., North Star.
Hatch, C. B., Newark.
Hollingshead, Frances M., Cincinnati.
Johnston, E. S., Cincinnati.
Jones, J. C., Dillonvale.
Jones, L. M., Dayton.
Kiser, I. C., Fletcher.
Landrum, A. B., Columbus.
Langdale, C. A., Cincinnati.
Lincoln, W. R., Cleveland.
McKinney, E. H., Doylestown.
Miller, A. C., Covington.
Mory, J. J., St. Henry.
Osborn, B. D., Waldo.
Riebel, G. P., Ashland.
Russell, A. R., Hamler.
Saunders, A. M., Shiloh.
Schirack, J. A., St. Henry.
Smith, C. D., Dayton.
Sprouil, O. T., West Union.
Stafford, F. P., New Carlisle.
Taylor, L. L., Yellow Springs.
Teachnor, K. R., Leesburg.

OKLAHOMA.

Bledsoe, Martha J., Chickasha.
Cranfill, A. G., Grady.
Darling, W. A., Hewitt.
Dick, W. S., Baum.
Dunsworth, O. C., Thackerville.
Ellis, G. H., Kemp.
Fowler, Wm. Alderson.
Higgins, H. A., Glenn.
Hume, R. R., Minco.
Love, J. D., Nashville.
Mabry, E. D., Mountain View.
Reid, J. G., Hydro.
Sullivan, Ernest, Antioch.
Van Deever, J. G., Fairland.

OREGON.

Townley, J. T., Dufur.

PENNSYLVANIA.

Baer, W. K., Lancaster.
Berry, M. L., Wellsboro.
Bremer, P. F., Philadelphia.
Brewe, A. J., Philadelphia.
Burkholder, J. L., New Castle.
Dill, W. W., Pottstown.
Downs, A. W., Philadelphia.
Eft, Frederick, Philadelphia.
Eisenhart, H. P., Harrisburg.
Evans, Thomas, Jr., Pittsburg.
Farrar, J. K., Audenried.
Fox, W. G., Lancaster.
Gaskill, H. K., Philadelphia.
Gilpin, S. F., Philadelphia.
Goddard, H. M., Philadelphia.
Goodsell, J. W., New Kensington
Gruver, C. D., Stroudsburg.
Guilfogle, W. F., Philadelphia.
Hagenbuch, P. H. F., Stroudsburg.
Hall, W. D. W., Philadelphia.
Hammers, J. S., Indiana.
Harley, J. P., Williamsport.
Hartman, P. A., Harrisburg.
Hearn, Marion, Philadelphia.
Heinebery, Alfred, Philadelphia.
Hopwood, G. B., Smock.
Hattenstein, D. E., Millersburg.
Koenig, A. S., Lewistown.
Krieger, G. L., New Kensington.
Louthan, J. S., Beaver Falls.
Luther, J. W., Palmerton.
Mechline, C. C., Allegheny.
Mock, D. C., Medix Run.
Moxey, A. F., Mt. Airy.
Nason, J. B., Tyrone.
Nealon, W. A., Pittsburg.
Penrose, C. B., Devon.
Repp, J. J., Philadelphia.

Rink, C. E., Shelocta.
Robinson, George, Jr., Philadelphia.
Ross, W. F., New Kensington.
Severson, I. W., Scranton.
Sheaff, P. A., Philadelphia.
Stewart, H. M., Altoona.
Tracy, Martha, Philadelphia.
Walters, De Forest E., McKeesport.
Wenrich, J. A., Wernersville.
Wilson, W. O., Clearfield.
Wycoff, W. A., Pittsburg.

RHODE ISLAND.

Armington, H. H., Warren.

SOUTH DAKOTA.

Harvey, W. D., Clear Lake.

TENNESSEE.

Raines, N. F., Memphis.

TEXAS.

Boyd, J. L., Winfield.
Collier, J. I., Galveston.
Daly, J. M., Abilene.
King, S. F., El Paso.
McCorkle, J. H., Gordon.
Samaniego, J. A., El Paso.
Thomas, J. B., Midland.
White, H. S., El Paso.
Wilson, Pierre, Dallas.

VIRGINIA.

Bates, R. D., Newtown.
Jones, J. W. C., Newport News.
Macon, W. D., Charlottesville.
Marshall, T. R., Richmond.
Peyton, C. E. C., Pulaski City.

WASHINGTON.

Austin, O. B., Aberdeen.

WEST VIRGINIA.

Cummings, Edward, Hinton.
Fawcett, W. P., Alderson.
Harloe, W. W., Matoaka.
Miller, R. B., Hinton.

WISCONSIN.

Hilger, C. H., Dale.
James, A. W., Muscoda.
Melaas, W. G., Stoughton.
Mieding, A. E., Milwaukee.
Riordan, J. F., Mattoon.

WYOMING.

Lauzer, E. S., Rock Springs.
Pestal, Joseph, Douglas.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

KANSAS State Board of Medical Registration and Examination, February 11. Secretary, Dr. D. P. Cook, Clay Center.

WYOMING State Board of Medical Examiners, Laramie, February 12-14. Secretary, Dr. S. B. Miller, Laramie.

CONNECTICUT State Board of Medical Examiners, City Hall, New Haven, March 10. Secretary, Dr. Charles A. Tuttle, 196 York St., New Haven.

CONNECTICUT Homeopathic Board of Medical Examiners, New Haven, March 10. Secretary, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

CONNECTICUT Eclectic Board of Medical Examiners, New Haven, March 10. Secretary, Dr. T. S. Hodge, 16 Main St., Torrington.

IOWA State Board of Medical Examiners, Capitol Building, Des Moines, March 10-12. Secretary, Dr. Louis A. Thomas, Des Moines.

MASSACHUSETTS Board of Registration in Medicine, Room 15, State House, Boston, March 10-12. Secretary, Dr. Edwin B. Harvey, Room 159, State House, Boston.

MAINE Board of Registration of Medicine, City Building, Portland, March 17-18. Secretary, Dr. William J. Maybury, Saco.

Florida Eclectic June Report.—Dr. S. F. Smith, secretary of the Florida State Board of Eclectic Medical Examiners, reports the written examination held at Leesburg, June 12-13, 1907. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 90. Only one candidate, a graduate of the Eclectic Medical Institute, Cincinnati, 1907, appeared for license and was successful.

Nebraska November Report.—Dr. E. J. C. Sward, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, Nov. 5-6, 1907. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 7, of whom 4 passed and 3 failed. Eighteen reciprocal licenses were granted. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Bennett Coll. of Ecl. Med. and Surg.	(1907)	*
Keokuk Med. Coll.	(1900)	75
Medical Coll. of Ohio	(1888)	85
Omaha Med. Coll.	(1902)	88
FAILED.		
Barnes Med. Coll.	(1906)	73.8
Creighton Med. Coll.	(1907)	60.6
Lincoln Med. Coll.	(1907)	71.6

LICENSED THROUGH RECIPROCITY.

	Year Grad.	Reciprocity with.
Rush Med. Coll.	(1887) Iowa; (1906)	Utah
Northwestern Univ. Med. School	(1904); (1907)	Iowa
Bennett Coll. of Ecl. Med. and Surg.	(1907)	Illinois
University of Iowa	(1898); (1900)	Iowa
Sioux City Coll. of Med.	(1903)	Iowa
King Eclectic Med. Coll., Des Moines	(1886)	Iowa
Keokuk Med. Coll.	(1895); (1898); (1907)	Iowa
Louisville Med. Coll.	(1883), U. S. Army; (1905)	Indiana
University of Michigan	(1902)	Michigan
Lincoln Med. Coll.	(1907)	Illinois
Starling Med. Coll.	(1894)	Ohio
University of Vermont	(1887)	New Jersey

* Percentage not given.

Marriages

HOMER HARRISON GRIFFIN, M.D., to Miss Lelia Hartman, both of St. Louis, January 22.

CLARK FRANCIS BRUSO, M.D., to Miss Theresa C. Rauert, both of Buffalo, N. Y., recently.

CRAWFORD TAIT JUSTICE, M.D., to Miss Elsa M. Woodruff, both of Philadelphia, January 22.

MILTON FRASER PERCIVAL, M.D., to Miss Mary B. McBurney, both of Philadelphia, January 21.

JOSEPH F. ETZBACH, M.D., to Miss Josephine Davison, both of Utica, Ill., in Chicago, January 18.

ROBERT C. BROWN, M.D., Lancaster, S. C., to Miss Daisy McIntyre of Marion, S. C., January 22.

JOHN W. HUTCHINS, M.D., to Miss Florence Jean Shump, both of Sciotoville, Ohio, Nov. 27, 1907.

JACOB CHRIS LANGE, M.D., Pittsburg, Pa., to Mrs. Edith Rick of Williamsport, Pa., Dec. 23, 1907.

GEORGE EARLE RAIGUEL, M.D., Philadelphia, to Miss Mary Matlack of Lewisburg, Pa., January 29.

F. D. CARPENTER, M.D., Greensboro, Md., to Miss Annie Schley Haines of Macon, Ga., Dec. 25, 1907.

CHARLES B. BATEMAN, M.D., to Miss Lena Eakin, both of Vandalia, Ill., at St. Charles, Mo., January 19.

HENRY A. BARCLAY, M.D., Denver, Colo. to Miss Grace E. MacCerron of Fredericktown, Ohio, January 2.

ROBERT EMMETT LEDBETTER, passed assistant surgeon, U. S. Navy, to Miss Ethel Cowie, at Annapolis, Md., January 22.

DUDLEY M. CULVER, M.D., Indianapolis, Ind., to Miss Grace Turner of Columbus, Ind., at Louisville, Ky., January 15.

MONTGOMERY ALEXANDER STUART, M.D., Washington, D. C., to Miss Nina Pauline Stuart of Highland Park, Mich., January 28.

Deaths

John Ordronaux, M.D. National Medical College, Washington, D. C., 1859; a member of the Medical Society of the State of New York and Queens-Nassau Medical Society; a graduate in law from Harvard University in 1852; examiner of recruits in Brooklyn at the outbreak of the Civil War; author of "Hints on Health in Armies," the first American work on military hygiene, and a "Manual for Military Surgeons on the Examination of Recruits and Discharge of Soldiers;" in 1864, assistant surgeon to the Fifteenth Infantry, N. G. S. N. Y.; lecturer on medical jurisprudence in the law school of Columbia College; and professor of medical jurisprudence in Dartmouth Medical School, Hanover, N. H.; the first New York state commissioner of lunacy, from 1873 to 1882; an expert on medical jurisprudence, insanity and expert testimony; who was given the degree of LL.D. by Trinity College in 1870, and by Dartmouth College in 1895; died at his home in Glen Head, N. Y., January 20, from cerebral hemorrhage, aged 77.

Henry Lippincott, M.D. Jefferson Medical College, Philadelphia; colonel and assistant surgeon general U. S. Army, retired; who served in the Civil War as assistant surgeon of the Sixth California Volunteer Infantry; was made a lieutenant and assistant surgeon, U. S. Army, Feb. 28, 1866; captain and assistant surgeon, Nov. 11, 1868; major and surgeon, Aug. 17, 1884; lieutenant colonel and deputy surgeon general, April 10, 1898; colonel and assistant surgeon general, April 13, 1901, and was retired on account of age, Sept. 22, 1903; performed meritorious service during the cholera epidemic in the Seventh United States Cavalry in 1867; was first chief surgeon of the Department of the Pacific and the Eighth Army Corps and served under General Merritt at Manila and General Otis at the outbreak of the insurrection in the Philippine Islands in 1889; died at his home in Brooklyn, January 24, after a long illness, aged 68.

Anthony Heger, M.D., Brigadier General, U. S. Army, retired; University of Pennsylvania, Department of Medicine, Philadelphia; who was appointed assistant surgeon in the Army from Pennsylvania, Aug. 29, 1856; was made captain and assistant surgeon five years later; major and surgeon, Sept. 17, 1862; was breveted lieutenant colonel, March 13, 1865; promoted to lieutenant colonel and surgeon, Jan. 24, 1886, and to colonel and surgeon, Jan. 2, 1891; was retired Dec. 4, 1892, on account

of age, and advanced to the grade of brigadier general retired, April 23, 1904, on account of Civil War service; died in New York City, January 24, aged 79.

Horatio B. Buck, M.D. Jefferson Medical College, Philadelphia, 1856; a member of the American Medical Association; once president of the Tri-State Medical Society, and vice-president of the Illinois State Medical Society; surgeon of volunteers, afterwards brigade surgeon and later surgeon-in-chief at the central rendezvous of Illinois troops in Springfield during the Civil War; a member of the local pension board since 1877, and for several years its executive officer; died at his home in Springfield, January 23, after an illness of a few days, aged 75.

William Octavius Eversfield, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1861; a member of the American Medical Association, and formerly president of the Prince George County (Md.) Medical Society; chief surgeon of the Panama Railroad before the Civil War, and surgeon of the First U. S. Cavalry during the war; surgeon in charge of the medical department of the Maryland Agricultural College; died suddenly at his home in College Park, Md., from acute gastritis, January 20, aged 67.

Robert Silvester Blakeman, M.D. University of Virginia, Department of Medicine, Charlottesville; passed assistant surgeon U. S. Navy (retired); who entered the Navy in 1896, served two years at sea and five years, two months and one day on shore duty, and was retired for incapacity resulting from incident of service, Oct. 7, 1902; one of the eight men who volunteered to capture Iloilo, after the battle of Manila Bay; died at the King's Daughters' Hospital, Norfolk, Va., January 22, after a brief illness, aged 34.

Frederick Augustus Burrall, M.D. College of Physicians and Surgeons in the City of New York, 1857; a member of the medical societies of the state and county of New York and the New York Academy of Medicine; interne in Bellevue Hospital and New York Hospital; surgeon to the Northern Dispensary; attending physician in the Presbyterian and Charity hospitals and the New York Asylum; who served for a short time in the Navy during the Civil War; died at White Plains, N. Y., January 21, aged 77.

Thomas Fillebrown, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1863; a member of the American Medical Association; lecturer on oral and dental surgery in the Portland School of Medical Instruction for three years, and later professor of operative dentistry and oral surgery in the Harvard College of Dental Surgery; one of the leading dental surgeons of Boston; died at the Boothby Hospital in that city, January 22, after an illness of one week, aged 72.

Henry D. Roehler, M.D. Rush Medical College, Chicago, 1900; of Chicago; a member of the Illinois State and Cook County medical societies; assistant obstetrician in the Chicago Lying-in Hospital; attending obstetrician at the Englewood Hospital, and demonstrator of operative obstetrics in the Northwestern University Medical School; died January 30 at the Englewood Hospital, from septicemia contracted in the course of his professional work, aged 32.

Frank Asbury Wygant, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1882; a member of the staff of the Soldiers' and Sailors' Home, Bath, N. Y., and later a member of the board of health of Cohocton, N. Y.; an expert in microscopic work; after a number of years' illness with chronic articular rheumatism and psoriasis, died at his home in Cohocton, January 26, from pneumonia, after an illness of twelve days, aged 49.

Percival E. Loder, M.D. Jefferson Medical College, Philadelphia, 1875; a member of the American Medical Association; resident physician at the Philadelphia Hospital from 1875 to 1876; for 23 years a police surgeon of Philadelphia, and for nine years professor of anatomy in the Pennsylvania College of Dental Surgery; died at his home in Philadelphia, January 19, from pneumonia, after an illness of three days, aged 54.

Adam Alexander McKittrick, M.D. University of Georgia, Medical Department, Augusta, 1860; a member of the Medical Association of the State of Alabama and Conecuh County Medical Society; for four years a surgeon in the Confederate service during the Civil War, and for a number of years health officer of Conecuh County; died at his home in Evergreen, January 18, after an illness of about ten days, aged 74.

Francis Morley Michael, M.D. Bellevue Hospital Medical College, New York City, 1891; a member of the American Medical Association; a member of the staff of Manhattan Eye and Ear Hospital, New York City, for four years; oculist to the Binghamton State Hospital, Binghamton City Hospital, St. Mary's Home and St. Joseph's Academy; died at his home in Binghamton, N. Y., January 23, aged 38.

Levy L. Rowland, M.D. Willamette University, Medical Department, Salem, Ore., 1872; first superintendent of public instruction in Oregon; later president of the Christian College, Monmouth, and from 1891 to 1895 superintendent of the Oregon State Insane Asylum, Salem; died at his home in that city, January 19, from dropsy, after an illness of several years, aged 77.

Simon P. Drayer, M.D. Cincinnati College of Medicine and Surgery, 1872; a member of the Ohio State Medical Association and Preble County Medical Society; formerly coroner of Montgomery County; a member of the city council of West Alexandria; died at his home in that city, January 19, from heart disease, after an illness of two weeks, aged 66.

Charles Buffington Fager, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1874; assistant surgeon in the federal service during the Civil War; for a number of years a member and president of the school board of Harrisburg, Pa.; died at his home in that city, January 24, from pneumonia, after an illness of one week, aged 66.

James White Thomas, M.D. California Medical College, San Francisco, 1881; a veteran of the Civil War; member of the Nebraska legislature in 1885; for more than 40 years a citizen and practitioner of Weeping Water, Neb.; died at his home, January 16, from pulmonary disease due to a bullet wound received in the battle of Shiloh, aged 65.

Finis D. Beauchamp, M.D. Medical Department of Fort Worth (Texas) University 1897; a member of the American Medical Association; of Mangum, Okla., was shot and killed while boarding a train at Lawton, Okla., January 15, by two men whose brother Dr. Beauchamp had killed in a fight at Hobart several months before, aged 39.

Joseph Anderson, M.D. New York University Medical College, New York City, 1879; a member of the medical societies of the state and county of New York, the German Medical Association and the Medical Society of Greater New York; medical inspector of the health department of New York City; died at his home January 23, aged 63.

Leslie Ernest Beaghler, M.D. Rush Medical College, Chicago, 1896; of Middlepoint, Ohio; a member of the Ohio State Medical Association and Van Wert County Medical Society; while making a professional call January 27, was struck by a passenger train of the Pennsylvania System, at a crossing near his home and instantly killed, aged 40.

Walter E. Mowen, M.D. Western Reserve University Medical College, Cleveland, 1889; a member of the Ohio State Medical Association and Columbiana County Medical Society; once city physician of East Liverpool; died at his home in East Liverpool, January 23, from typhoid fever, after an illness of one week, aged 50.

William Snyder, for several years a practitioner of Butler County, Kan.; a veteran of the Civil War; postmaster of Albion, Ind., during President Grant's administration; died at his home in Los Gatos, Cal., Dec. 8, 1907, after an illness of fifteen hours, from senile debility, aged 74.

Robert Pope Ross Gordon, M.D. University of Edinburgh, Scotland, 1886; a member of the American Medical Association, and a pioneer practitioner of Great Falls, Mont.; died at his home in that city, January 24, from cancer of the intestines, after an illness of two months, aged 46.

Silas K. Coleman, M.D. Washington University, School of Medicine, Baltimore, 1882; a member of the Mississippi State Medical Association and Madison County Medical Society; died at his home in Canton, January 15, from heart disease, after an illness of several months, aged 58.

Ira Francis Cameron, M.D. Eclectic Medical Institute, Cincinnati, 1876; of Keswick, Iowa; a member of the Iowa State and Keokuk County medical societies; and the Iowa State Association of Railway Surgeons; died recently in Pasadena, Cal., and was buried January 14, aged 60.

John H. Tyler, M.D. Rush Medical College, Chicago, 1857; a member of the Illinois State and De Witt County medical societies; a member of the legislature and twice state senator; died at his home in Clinton, January 25, from heart disease, after an illness of eleven weeks, aged 80.

Spurgeon Cheek, M.D. Hospital College of Medicine, Medical Department Central University, Louisville, 1898; in charge of the hospital at Searchlight, Nev.; died at the California Hos-

pital, Los Angeles, January 10, from septicemia, 15 days after a surgical operation, aged 34.

Herbert M. Camp, M.D. Western Reserve University Medical College, Cleveland, 1882; medical examiner in the pension office, Wasington, D. C., for 15 years; died at his home in Takoma Park, D. C., January 21, from heart disease, after a short illness, aged 47.

John C. Vanderveer, M.D. Long Island College Hospital, Brooklyn, N. Y., 1885; a member of the Medical Society of the State of New York and Queens-Nassau Medical Society; died at his home in Mineola, N. Y., January 18, after a prolonged illness, aged 46.

Eckhart L. Beaumont, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1848; for many years an active practitioner of San Antonio, Texas; died at his home in that city, January 21, after an illness of several years, aged 84.

Leavitt R. J. Varnum, M.D. Medico-Chirurgical College of Philadelphia, 1903; of Lowell, Mass.; a member of the Massachusetts Medical and Middlesex District medical societies; died at the Lowell General Hospital, January 21, after a brief illnes, aged 30.

David Rauh, M.D. University of Munich, Germany, 1886; Texas Medical College and Hospital, Galveston, 1890; of Houston, Texas; a member of the South Texas Medical Society; died suddenly in Houston, from heart disease, January 20, aged 52.

William T. Varner, M.D. Barnes Medical College, St. Louis, 1896; of Evansville, Ind.; a member of the Indiana State Medical Association and Vanderburgh County Medical Society; died suddenly at the bedside of a patient in Evansville, January 29.

John P. Arnold, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1893; superintendent of the Presbyterian Hospital in that city since 1900; died at his home in Philadelphia, January 25, after an illness of one day, aged 40.

Benjamin Franklin Baird, M.D. Botanic Medical College, Memphis, Tenn., 1857; a member of the Tennessee Medical Association and Hardemann County Medical Society; died at his home in Vildo, Tenn., recently and was buried January 22, aged 71.

John D. Collins, M.D. Missouri Medical College, St. Louis, 1845; a surgeon in the Confederate service during the Civil War, and one of the oldest practitioners of Covington, Ky.; died suddenly at his home, January 17, from angina pectoris, aged 84.

Patrick M. Kelly, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1881; a veteran of the Civil War; died at his home in Philadelphia, January 20, from cerebral hemorrhage, after an invalidism of nearly three years, aged 73.

Jarrette D. Law, M.D. Louisville (Ky.) Medical College, 1884; a member of the State Medical Association of Texas and Bell County Medical Society; died at his home in Belton, January 21, after an illness of two or three days, aged 45.

Robert A. Kerr, M.D. Western Reserve University Medical College, Cleveland, 1870; of Youngstown, Ohio; a veteran of the Civil War; died at the Youngstown City Hospital, January 23, from pneumonia, after an illness of ten days, aged 65.

Alfred C. Davis, M.D. Kansas Medical College of Topeka, 1899; a member of the American Medical Association; local surgeon of the St. Joseph & Grand Island Railroad; died at his home in Hamlin, Kan., January 20, from pneumonia, aged 31.

Warren H. Crain, M.D. Medical Department of Tulane University of Louisiana, New Orleans, 1904; a member of the Louisiana State and Washington Parish medical societies; died at his home in Vernado, Nov. 14, 1907, aged 30.

Lloyd W. Hixon, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1862; a veteran of the Civil War, and librarian of Nashotah House, Nashotah, Wis., for 14 years; died at that place January 2, aged 78.

James B. Hudson, M.D. Eclectic Medical Institute, Cincinnati, 1870; a veteran of the Civil War; formerly a practitioner of Columbus, Ind.; died at the Soldiers' Home, Lafayette, Ind., January 20, from chronic gastritis, aged 71.

Henry Wheeler Painter, M.D. Medical Institution of Yale College, New Haven, Conn., 1856; of North Haven, Conn.; died from heart disease in West Haven, Conn., January 9, after a long period of invalidism, aged 76.

John W. Humphrey, M.D. Hygieo-Therapeutic College of New York, New York City, 1864; formerly of Shenandoah, Iowa; died from disease of the brain in Galesburg, Ill., after an illness of about six years, aged 71.

Hamilton D. Brown, M.D. Baltimore University School of Medicine, 1899; and assistant professor of surgery at his alma mater; died at his home in Waverly, Baltimore, January 26, from pneumonia, aged 29.

William May Houston, M.D. Jefferson Medical College, Philadelphia, 1844; who began practice in Missouri in 1845; died at his home in Mexico, Mo., Nov. 6, 1907, from senile debility, aged 88.

James C. Kinkle, M.D. University of Maryland School of Medicine, Baltimore, 1847; for many years a practitioner of Stillwater, Minn.; died at his home in St. Paul, January 13, aged 82.

Harvey De Ford Williams, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1880; died at his home in Kansas City, Kan., from heart disease, January 17, aged 78.

Thomas O. Clements, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1880; died at his home in Dover, Del., January 22, from appendicitis, after a short illness, aged 55.

Oliver Cromwell Comstock, M.D. College of Physicians of the Western District, Fairfield, N. Y., formerly of Marshall, Mich., died at Brookline, Mass., Aug. 10, 1907, aged 88.

Manson L. Banks, M.D. University of Louisville, Medical Department, 1856; a pioneer resident of Columbia, Miss., died at his home, January 9, after a long illness, aged 76.

William P. Conner, M.D. Medical Department, University of Nashville, Tenn., 1877; of Blythe, Miss.; died at his plantation, Lake Cormorant, Miss., January 12, aged 54.

Peter Von Lackum, M.D. Physio-Medical College, Cincinnati, 1869; af Omaha, Neb., died at St. Bernard's Hospital, Council Bluffs, Iowa, January 19, after a long illness.

J. Eugene Kelly, M.D. Albany (N. Y.) Medical College, 1891; of New London, Conn., died at the home of his sister in Pittsfield, Mass., January 17, aged 39.

R. Holding M.D., of Columbia, Tenn., who retired from practice about 40 years ago, died at his home in Columbia, Sept. 4, 1907, aged 76.

George H. Le Grand, M.D. University of Louisville, Medical Department, 1858; died at his home in Hereford, Texas, January 23, aged 76.

Deaths Abroad.

Sir Alfred Baring Garrod, M.D. London, 1843; F.R.C.P. London, 1856; F.R.S.; fellow and in 1860 president of the Medical Society of London; honorary member of the Pharmaceutical Society; some-time professor of materia medica and therapeutics, and clinical medicine, and later physician and consulting physician to the King's College Hospital; late physician extraordinary to Queen Victoria; vice-president of the Royal College of Physicians, London, and first Moxon gold medalist in 1891; an honorary member of the Berlin Society for Internal Medicine; one of the best known practitioners of Great Britain, and for many years an authority on gout and rheumatism; who received the honor of knighthood in 1887; died at his home in London, Dec. 28, 1907, aged 88. In 1847 Dr. Garrod made his famous discovery of the presence of uric acid in the blood of gouty patients, and 12 years later published his well-known work on the nature and treatment of gout.

Thomas Annandale, M.D. Edinburgh, 1860; F.R.C.S. Edinburgh, 1863; F.R.S.C. England (honorary), 1888; surgeon general to the King's Bodyguard in Scotland; surgeon to the Edinburgh Royal Infirmary; regius professor of clinical surgery in the University of Edinburgh; consulting surgeon to the Royal Sick Children's, Deaconess and Royal Maternity hospitals; gold medalist in 1860; one of the most notable surgeons associated with the Edinburgh school; an enthusiastic leader in all movements for the good of students; died suddenly at his home in Edinburgh, Dec. 20, 1907, aged 69.

J. von Mering, M.D., professor of clinical medicine at Halle, died there January 6, aged 59. His principal achievements were in the line of medical chemistry, pharmacology and toxicology, the discovery of phloridzin diabetes and the diabetes that follows removal of the pancreas. His "Manual of Internal Medicine" is his latest large work.

J. Onate, M.D., the dean of the profession in Mexico, died at Mexico City, Dec. 23, 1907, aged 89. He continued his practice to the very eve of his death from acute pneumonia.

A. Voigt, professor of hygiene at Berne until 1893, died January 4, aged 85.

Society Proceedings

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and Second Annual Meeting, held at Albany, Jan. 27-30, 1908.

The President, DR. FREDERIC C. CURTIS, Albany, in the Chair.

The officers elected were named in THE JOURNAL last week.

The reports of officers and committees were presented to the House of Delegates January 27. The following is a summary:

The Membership.

Dr. Wisner R. Townsend, secretary, reported that the membership, Jan. 15, 1908, was 6,154. This number exceeds that of the same date last year by nearly 300. According to Volume IX of the Medical Directory of New York, New Jersey and Connecticut, there are 12,168 physicians in New York State, and he advised a more determined effort to increase the membership of the county societies. The importance of the national organization is growing from year to year, and it is very desirable that the Medical Society of the State of New York be fully represented at the annual meeting. As the meetings are held in various parts of the country and last five days, it follows that the delegates must be absent from home a week and often longer. It therefore seems proper that the society pay the traveling expenses of its delegates.

The Legislation.

Dr. Arthur G. Root, chairman of the Committee on Legislation, said that in all 64 bills had been introduced, of which number 18 had become laws. Of the 64, 21 were general medical bills; among these were the bills on antivivisection, incorporation of the Health Defense League, osteopathy, massotherapy and antivaccination, all these died in committee. The so-called "Medical Unity Bill" or "One-Board Bill," which passed both houses and was signed by the governor, was the subject of many controversies, and was amended and reprinted several times. The optometry bill, by nefarious juggling on the part of the introducer and other members of the legislature, passed both houses with simply a nominal hearing, and reached the governor, who vetoed it.

The Expenses.

Dr. Alexander Lambert, treasurer, reported a surplus of $13,849.03 in the treasury, Dec. 31, 1907. Dr. Julius C. Bierwirth, chairman of the council, reported that the net cost of the *New York State Journal of Medicine* for 1907 was $1,851.39, in addition to $952.93 to be charged off for bad and doubtful debts. The total expenditures for the journal were $9,075.44, and there was received for advertising $7,213.77. Other receipts were $10.28, a total income of $7,224.05. Subtracting $7,224.05 from $9,075.44 leaves the $1,851.39 above referred to, the amount the journal actually cost the society, equivalent to an annual subscription of $0.30 from each member. The balance was paid by the advertisers. The cost of the directory for 1907 was $6,835.92.

The Public Health.

Dr. John L. Heffron, chairman of the Committee on Public Health, made a report. In order that any physician in the state might have prompt bacteriologic examination of secretions, etc., it was recommended last year that in each county seat there be equipped a laboratory under the charge of a skilled bacteriologist. To do this some counties found special legislation necessary. During the present session of the legislature a law will be proposed to obviate this difficulty. The state laboratory in Albany is now making antitoxin for tetanus and diphtheria, the latter at one-tenth the cost as furnished by private makers. Tuberculosis continues to lead the list of causes of death, with pneumonia second. The certainty of the intercommunicability of human and bovine tuberculosis has been again demonstrated by the experiments of Corbett of England. The governor has taken this subject up in a recent message and urged measures to clear tuberculous cattle from all herds in the state, and to procure for the people pure water, pure ice and pure food.

Dr. Henry L. Elsner, chairman of the special Committee on Annual Meetings, recommended dividing the state into four groups of district branches, and holding a semi-annual meeting annually with one of these groups.

The Correspondence Nurse School.

Dr. A. T. Bristow, chairman of the Committee on Training Schools, declared that nursing can not be taught by correspondence, and regretted that such schools as the Chautauqua School for Nursing at Jamesport exist. If women are willing to take a correspondence course in nursing, and offer themselves as nurses at $30 a week, that is a matter of individual morality and conscience. With regard to the Short Term School, the catalogue states that the school is endeavoring to supply the people of small means women less highly trained than the registered nurses. The Albany School of Nursing seems to be a reasonable attempt to furnish such women. The committee was unwilling to say that there is not place for such schools when honest and reputably conducted.

Organization Necessary to Professional Betterment.

The President, DR. FREDERIC C. CURTIS, Albany, called the society to order on Tuesday, January 28, in the common council chamber of the City Hall, and delivered his address. Dr. Curtis said that every page in history teaches the value of organization. Although great work was done in seclusion, by the initiated and trained, it was valueless until turned into the current of common life; it is then passed along and becomes thereby a stream of influence helpful to humanity. This society had one definite purpose for its organization, to associate all reputable physicians of the commonwealth and to ostracise the unworthy. Having always advocated a community of possession in regard to knowledge and invention, the society has little use for trades unions.

It was in good degree an altruistic spirit that prompted John Stearns, William McClelland and Nicholas Romayne to fight through the legislature in 1806 the bill which established our system of county and state organization. What would be the condition of the medical profession but for the work of this society? The history is full of the records of things accomplished for professional betterment. This very year by its almost unaided efforts there has been placed on the statute books a medical practice law which is the culmination of what it has sought for more than twenty-five years.

Its democracy has been the chief asset of this organization, obligation is the inevitable offspring of capacity. The obligation of a medical body to serve the community is imperative. The medical profession is rather inclined to forget its obligation to the public. The public is indifferent to sanitation; indeed, it seems to come into the category of moral issues generally, which need a prophet and a preacher to lead the way. The people are more apt to obstruct work for their salvation than to help it, and it is seldom that a community has any conception of the value of sanitary protection. The same failure to estimate the importance of safeguarding health is found with legislators and public custodians of affairs of state. The health department is pushed aside for others that protect wealth and bring money into the treasury, or even concern the well-being of domestic animals, unmindful that sanitation, not counting the human distress relieved by it, is the greatest conservator of material values of the world to-day. History bears witness to the material worth of sanitation.

Another subject that appeared to Dr. Curtis to be peculiarly one for the medical profession as an organized body to solve is the alcohol question. In closing he said: "But let us, as a body of a learned profession, never be unmindful of the fine old French motto, 'Rank imposes obligation.'"

Nihilism and Drugs.

DR. ABRAHAM JACOBI, New York, spoke of the tendency to belittle the use of drugs and took a conservative stand. It has been said by combining drugs we cloud observation, but it should be remembered that we are treating disease and it is not always well to wait for the action of a certain drug given for one symptom to wear off before giving another drug for another symptom when it is possible to combat both symp-

toms at the same time by combining drugs. Dr. Jacobi thought the expectant treatment had been the cause of many deaths. Often death resulted when proper treatment would have saved the patient. Expectant treatment is a compound of ignorance and indolence. It is malpractice in cases that might have resulted in recovery by proper and timely treatment. He spoke of the many factors on which the administration of drugs and their doses depends, and especially of the use of opium in children. A child of one year with enteritis could take from 1/30 to 1/40 of a grain of opium, and in such cases he had never seen a case of opium poisoning. Many drugs are of great value, as the poppy, mercury, male fern and quinin. Our expectations have been disappointed in regard to sero-organotherapy. He referred to the use of methylene blue in inoperable cancer and said he acknowledged the priority of his South Carolina colleague's claim in regard to this remedy. He has used guaiacol in at least 5,000 cases of tuberculosis.

Diffuse Peritonitis in Women.

DR. ELLICE MCDONALD, New York, gave a report of 50 cases of diffuse peritonitis, of which 41 were studied bacteriologically. He reviewed the various bacterial causes and the peculiar phases of diffuse peritonitis from pelvic causes and from association with pregnancy. In 42 cases out of the 50, infection was the result of an extension from an ulceration of the bowel; from appendicitis in 4 per cent.; after gastric ulcer in 2 per cent.; after appendicitis in 16 per cent. Pelvic conditions, apart from pregnancy, gave rise to 26 per cent. The causes associated with pregnancy caused 30 per cent. Among the infections he found the following: *Streptococcus* in 18 cases; *B. coli* in 13; *Staphylococcus aureus* in 6; *B. pyocyaneus* in 2; *Gonococcus* in 3; *Pneumococcus* in 3; *B. encapsulatus aërogenes* in 1; *B. tuberculosis* in 4 cases. Diffuse peritonitis as a result of appendicitis is thus shown to be of infrequent occurrence in women as compared with its occurrence from this cause in men.

Bier's Stasis Hyperemia Apparatus.

DR. JAMES N. VANDER VEER demonstrated the appliances used in this method of treatment. He also gave Dr. Rudolf Klapp's orthopedic treatment for ankylosis of the extremities. He presented a patient with an extensive phlegmon of the neck.

The Importance of Examining Individuals Exposed to Tuberculosis.

DR. JOHN H. PRYOR, Buffalo, said that although the mortality from tuberculosis may be slightly diminished, the actual morbidity from this disease has decreased but slightly. Even the influence of special measures for limiting its spread is still a controverted point. He had questioned 100 patients as to what instruction had been given them in the matter of spreading the disease and found that they had received none. Of course, this did not apply to New York City. Registration is of first importance in the campaign against this disease, but the majority of cases reported thus far are the advanced ones that have been dangerous for a long time. Dr. Pryor urged state control and more uniformity in execution and obedience. There should be some scheme for the detection of tuberculosis in its earliest stages when lives may be saved. Prevention is possible if early cases are detected. A bare chest examination should always be insisted on. Any one exposed to infection should be watched closely for a long time. Frequently the second victim in a family is not recognized as having the disease until a year or more after the death of the first. The evidences of disease should be sought before symptoms appear. In children three groups should be recognized—the glandular, the tracheobronchial and the pulmonary. Instructions should include the question as to whether others in the house in which one is infected have been examined. He expressed the opinion that the average practitioner fails to recognize the disease in its earliest stages. The physician is not fulfilling his duty who neglects those who are exposed to tuberculosis. He reported an endemic outbreak of tuberculosis which showed remarkable evidences of communicability.

(To be continued.)

Medicolegal

Admissible Demonstrations by Physicians Before a Jury.

The Supreme Court of Montana says that in the personal injury case of Stephens vs. Elliott the physician who attended the plaintiff at the time of his injury and for some two months thereafter, was permitted by the trial court, over the objection of the defendant, to make use of the plaintiff's arm to demonstrate or explain his testimony. The reason urged for the objection was that the testimony already given by the plaintiff was to the effect that other physicians had operated on the injured arm after this one had ceased to give it his care and before the trial. But, conceding this to be true, the court wholly fails to understand how it could affect the testimony of this physician in so far as his conclusions were based on facts obtained by him at the time of the injury, or why he could not by the use of the injured arm make his testimony all the more easily understood by the jury. Such an inspection of the injured limb in the presence of the jury is usually permitted; at least, the application to make such inspection is addressed to the sound, legal discretion of the trial court, and its ruling will not be disturbed except for a manifest abuse of such discretion. The court fails to see wherein the trial court abused its discretion in this instance.

Another physician who testified on behalf of the plaintiff was also permitted to make an experiment, or rather demonstration, before the jury. He testified that the motor nerves of the plaintiff's right arm were entirely destroyed, and that in sympathy with this condition the sensory nerves, which controlled the feeling in the hand, had become so far paralyzed that the plaintiff had no feeling in his hand; and to demonstrate this he was permitted to stick a hypodermic needle into the back of the plaintiff's right hand. The Supreme Court can not see any objection to the order of the trial court in permitting this demonstration before the jury. That such demonstrations are permitted is quite generally recognized by the courts and text-writers. In Osborne vs. Detroit, 32 Fed. 36, it was held by the United States Circuit Court that, where the plaintiff claimed to be paralyzed by a fall, it was not error to permit a medical attendant, who had not been sworn, to demonstrate the loss of feeling on the part of the plaintiff by thrusting a pin into the side of the plaintiff claimed to be paralyzed. See also 2 Jones on Evidence, Section 406, 1 Wigmore on Evidence, Section 445, and 2 Wigmore on Evidence, Section 1160, where the subject is treated at length.

Practice of Midwifery the Practice of Medicine.

The Supreme Judicial Court of Massachusetts says, on the second appearance before it of the case of Commonwealth vs. Porn, that it was charged that the defendant "did practice medicine" and "hold herself out as a practitioner of medicine," contrary to Section 8 of Chapter 76 of the Revised Laws of Massachusetts. The case was tried on an agreed statement of facts, the substance of which was that at the time mentioned in the complaint, and for some years prior, the defendant held herself out as a midwife and practiced midwifery, but did not claim to be a general practitioner of medicine, nor was she lawfully authorized to practice medicine as provided by Section 3 of said Chapter 76. She delivered many women in childbirth for compensation and carried with her to her patients the usual obstetrical instruments, which she used rarely on occasions of emergency, but never if a physician could be called in time. She used six printed prescriptions or formulas in treating her patients, which contained directions for their application, and the purposes for which they were used, as follows: "For vaginal douche," "For postpartum hemorrhage," "To prevent purulent ophthalmia in the newborn," "For after pains," "For uterine inertia," and "For painful hemorrhoids or piles." She used no other prescriptions or formulas. She was a trained nurse of experience, and was a graduate of the "Chicago Midwife Institute," from which she received a diploma which stated that she had received theoretical and practical instruction in the art of midwifery for a period of six months, and was declared a graduated midwife.

On these facts the trial court ruled that the jury would be authorized to find the defendant guilty, and the defendant's first exception related to this ruling. When the facts are undisputed, the Supreme Judicial Court goes on to say, it is generally a question of law whether they constitute a violation of the statute. Both medical and popular lexicographers define midwife as a female obstetrician, and midwifery as the practice of obstetrics. Section 7 of said Chapter 76 mentions obstetrics as one of the subjects of examination for the purpose of testing an applicant's fitness to "practice medicine." This goes far toward showing that obstetrics is a branch of the practice of medicine. It requires no discussion to demonstrate that, when, in addition to ordinary assistance in the normal cases of childbirth, there is the occasional use of obstetrical instruments, and a habit of prescribing for the conditions described in the printed formulas which the defendant carried, such a course of conduct constitutes a practice of medicine in one of its branches. Although childbirth is not a disease, but a normal function of women, yet the practice of medicine does not appertain exclusively to disease, and obstetrics as a matter of common knowledge has long been treated as a highly important branch of the science of medicine. In Higgins vs. McCabe, 126 Mass. 13, it is intimated that treatment of eyes of the infant (for which one of the prescriptions of the defendant was employed), is not within the duties of midwifery. In view of all the agreed facts, there was no error in submitting the case to the jury.

The defendant also offered expert evidence to prove that the practice of the defendant, as shown in the agreed facts, was not the practice of medicine in any of its branches, and that the conduct of the defendant was not holding herself out as a practitioner of medicine. This offer of evidence was excluded against the objection and exception of the defendant. The former decision of this case said that expert medical evidence was admissible to prove "what a midwife does or is expected to do as such, so that the court may see whether her acts or any of them are regarded as the practice of medicine in any of its branches. . . . Whether on such evidence it would appear that the ministrations of a midwife are those of a physician or rather of an attendant nurse and helper would ordinarily be a question of fact, or if the facts were not in dispute a question of law." 194 Mass.—At the present trial the facts were agreed. All that the defendant sought to show was these facts in the opinion of experts did not constitute the practice of medicine. But as the facts were not in dispute, within the former decision, the question was not one for expert evidence, but for the court. Moreover, on all the facts shown as to the use of prescriptions and the pains they were stated to alleviate and the use of obstetrical instruments, as well as attendance and service at childbirth by the defendant, it would be contrary to the plain intent of the statute and flying in the face of the common use of words to permit experts to testify that the language employed in the statute did not comprehend the acts confessedly performed by the defendant. The court is far from saying that it would not be within the power of the legislature to separate by a line of statutory demarcation the work of the midwife from that of the practitioner in medicine. See Midwives Act, 1902, 2 Edw. 7, c. 14, and collection of statutes in 1 Witthaus & Becker Med. Jurispr. 137 et seq. The statute now under consideration does not make such separation. State vs. Welch, 129 N. C. 579. Whatever hardship there might be on the defendant, who was a woman of good character and reputation as shown by the agreed facts, came from the scope of the statute.

The defendant contended that the statute as thus construed is unconstitutional. Its validity can not be questioned on this ground. The maintenance of a high standard of professional qualifications for physicians is of vital concern to the public health, and reasonable regulations to this end do not contravene any provision of the state or federal Constitution, Hewitt vs. Charier, 16 Pick., 358; Brown vs. Russell, 166 Mass., 14, 23; Decie vs. Brown, 167 Mass., 290; Hawker vs. New York, 170 U. S., 189; Reetz vs. Michigan, 188 U. S., 505; Meffert vs. Packer, 195 U. S., 625.

Wherefore, the court overrules the defendant's exceptions to the judgment of conviction against her.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal.

January 25.

1 *Value of the Social Worker and the Visiting Nurse to the Dispensary Patient. L. R. Williams, New York.
2 Cholelithiasis. C. H. Peck, New York.
3 Postdelirious Alcoholic Stupor. C. Stillman, New York.
4 *General Paralysis in Senile Period with Report of Two Cases. M. J. Karpas, Ward's Island, N. Y.
5 Cautery Clamp for Hemorrhoids. D. H. Murray, Syracuse, N. Y.
6 *Delayed Labor. W. B. Jennings, New York.
7 Unique Case of Infectious Orchitis. J. G. Beardsley, Philadelphia.
8 Case of Hysterical Retention of Urine, Complicated by Foreign Body. F. Bierhoff, New York.

1. **Social Workers.**—Williams says that the chief difficulty in the way of effective work in large dispensaries is not so much that the number of patients has increased as that the necessary work for each patient has increased with modern methods. In the smaller dispensaries, the physician can be a social worker, taking cognizance of the patient's home surroundings, his food, his occupation, or lack of it, and all the other things that are factors in the production of the disease. This condition has been met in Boston, and later at the Vanderbilt Clinic, New York, by the use of a social worker, a trained nurse or a woman physician, whose duty it is to investigate the conditions of the patients' homes and aid in rectifying conditions of whatever kind that militate against recovery. Instances are given showing some of the things accomplished, and it is seen that the social worker is a bureau of information who not only gives information to the physician in the dispensary, but also applies that information for the benefit of the patient. At the Vanderbilt Clinic, also, there has been installed recently a complete hydrotherapeutic outfit under the care of Dr. Baruch, as well as a baking outfit for joints, massage and exercise facilities. Outdoor nursing is also provided for. No part of the outdoor nursing is so valuable as that among the children. The infantile mortality in Manhattan and the Bronx for the period July 1 to Sept. 14, 1907, as compared with the preceding year and with that of the Nineteenth Ward during the same periods, shows in the first case an increase in total deaths and deaths from diarrheal diseases, but in the latter a decrease nearly as marked as the increase shown by the former; and while it can not be claimed that the visiting nursing is the cause of this reduction, it is at least very suggestive.

4. **General Paralysis.**—Karpas discusses the statistics bearing on senile paralysis, and concludes that the mental picture of paresis in the advanced period bears a striking resemblance to senile dementia. The onset of the psychosis is marked with intellectual enfeeblement, and the delusions are relatively rare. The grandiose ideas are not prominent. Illusions and hallucinations are seldom manifest, and in the author's cases these symptoms were not observed. There are no special somatic signs which stand out prominently in the disease picture, but they may be obscured by the usual physical changes common to senility. The duration of the mental malady is relatively rapid, though in the author's first case the course was exceptionally long, viz., five years. The diagnosis of general paralysis of the senile period is very difficult.

6. **Delayed Labor.**—Jennings defines delayed labor as that in which the frequency, strength, duration and expulsive character of the uterine pains has been so changed as to prolong the second stage so that the life of either the mother or the child is endangered. He considers the causes of uterine inertia, both local and general, and in regard to treatment states his belief in the early application of the forceps in the second stage of labor in such cases. His practice is to use forceps when after two hours in the second stage no progress has been made.

Medical Record, New York.

January 25.

9 *On What Does the Cure of Tuberculosis Depend? F. M. Pottenger, Monrovia, Cal.
10 *Death Rate of the City of New York as Affected by the Cosmopolitan Character of Its Population. W. H. Guilfoy, New York.

11 Case of Acute Gastrectasis, Following Typhoid and Premature Birth. Recovery. A. E. Roussel, Philadelphia.
12 Chancroidal Bubo and Its Treatment. H. H. Morton, Brooklyn, N. Y.
13 Case of Syphilitic Fever. E. D. Newman, Newark, N. J.
14 *Surgical Value of Iodin. W. T. Dannreuther, New York.
15 Carbolic Gangrene. I. Levin, New York.
16 Case of Ectopic Gestation. Diagnosis and Operation Before Rupture. W. H. Dukeman, Los Angeles, Cal.

9. Tuberculosis.—Pottenger inquires on what the curability of tuberculosis depends, and goes on to state that the important factors are the virulence and numbers of the infecting micro-organisms and the resisting power of the affected individual. He discusses in detail the results of variations in these three factors, and then deals with the various measures that combat them in a curative direction. Early diagnosis is of importance because it enables us to deal with a limited focus of disease before the resisting powers are too much depressed. Fresh air gives better nerve tone, improves appetite, and aids assimilation, thus also increasing the resisting power. He deprecates forced feeding, because what is the most desirable is not the most fat, but the highest state of nutrition. For this a selected dietary, suited to the digestive, assimilative and excretory powers of the patient is required. Too much stress must not be laid on the gaining of weight. He discusses Wright's inoculation method, and concludes that when these inoculations are added to the ordinary hygienic dietetic methods, the disease shows less tendency to spread, the patients develop fewer tuberculous complications, and a greater percentage of individuals are cured, than when hygienic and dietetic measures alone are used.

10. Racial Characteristics and the Death Rate.—Guilfoy analyzes the statistics of the death rate from all causes and from various diseases in the city of New York generally, and also separately in various blocks or quarters mainly inhabited, respectively, by people of one nationality, particularly German, Austro-Hungarian, Russian Pole, Italian, Bohemian, Irish, Chinese, Syrian, and negro. His conclusions are that the natives of Ireland, by reason in a great measure of their living at unfavorable age groups, increase the general mortality, and this is also true to a lesser extent of the natives of France, Switzerland and Scotland; the natives of Italy, Bohemia and the United States are credited with a rate almost the same as that of the general average of the city, while the natives of Sweden, Germany, Russian-Poland, Austro-Hungary and England affect favorably the general mortality. On the other hand, the immediate descendants of the Irish, Italians and Austro-Hungarians are instrumental in increasing the general rate and also the rate from certain preventable and infectious diseases; the immediate descendants of most of the other nationalities, including Americans, serve to lower the general rate.

14. Surgical Value of Iodin.—Dannreuther, from his experience with iodin, is convinced that it is an agent of high germicidal potency of the utmost value and endowed with remarkable penetrating power. The tincture is the most available form. He has used it repeatedly without a single case of iodism. In minor surgery wounds he has made it a practice, after thorough toilet, to inject tincture of iodin directly into the wound with an ordinary medicine dropper. Every such wound so treated has healed by primary union. He considers this the best method of procuring sterilization of a dirty wound. In erysipelas the painting of the eruption and a generous border of healthy surrounding skin with the tincture has checked the extension of the rash. It is useful for stimulating sluggish granulations and limiting the extension of the process in gangrenous ulcer. In major surgery a 1 per cent. watery solution of iodin and potassium iodid may be used for sterilizing the hands. The tincture is an excellent agent for sterilizing the skin before an incision. He believes Goelet's method of irrigating the abdominal wound, after closing the peritoneum, with a solution of one dram of the tincture to two pints of water, a valuable measure. In gonorrhea in the female, after the patient has emptied the bladder a solution of iodin, half a dram of the ticture to two pints of water, is injected directly into the urethra and bladder, allowed to remain a minute or two, and then voided. The process is repeated daily until edema of the vulva appears, when the injections are replaced by potassium permanganate 1 to 5,000 douches. One dram of tincture of iodin to four ounces of glycerin on a tampon is a valuable method, the author asserts, of procuring pelvic counter-irritation. After curetting for endometritis or abortion the uterus may be swebbed out with full strength tincture, or an intrauterine douche may be used. He also recommends it as a prophylactic against possible infection and postpartum hemorrhage. He does not believe that the value of iodin in surgery is appreciated to the extent it deserves.

Boston Medical and Surgical Journal.

January 23.

17 *Significance of Postoperative Acetonuria. E. B. Young and J. T. Williams, Boston.
18 Extracts from Dr. Alexander Hamilton's Itinerarium of 1744. A. Jacobi, New York.
19 Case of Chyluria Due to Filariasis. R. F. O'Neil, Boston.
20 Roentgen-Ray Diagnosis of Urinary Calculi. E. W. Caldwell, New York.
21 *Trypsin in Treatment of Malignant Tumors. W. P. Graves, Boston.

17. Postoperative Acetonuria.—Young and Williams summarize their conclusions as follows: Acetonuria is a common accompaniment of a large number of pathologic conditions. In these conditions it is the result of disturbances of metabolism. The occurrence of acetonuria seems to bear a special relation to disturbances of the gastroenteric tract. Possibly many of the cases of reported acetonuria following operation were the result of other diseases, especially sepsis. The formation and excretion of acetone, and probably also of its supposed antecedents, diacetic acid, beta-oxybutyric acid, etc., following operation, are the result of an altered metabolism and, in the adult at least, not the cause of any constitutional disturbance.

21. Trypsin in Malignant Tumors.—Graves discusses the history of this treatment and reports the result of his own investigations, begun in September, 1906. In every one of his six cases there was gradual inevitable progress of the disease; four patients are dead and two, though still living, will undoubtedly die very shortly. On the other hand, he states that a few injections of trypsin into one of the circumscribed nodules that occur in recurrent breast cancer will cause the nodule either to disappear, or to shrink greatly, and that particular nodule will not grow again. A section of such a shrunken nodule after several treatments shows under the microscope the remains of destroyed cancer cells, while the somatic cells of the connective tissue remain intact and healthy. It can not be claimed that any great advance has been made in the actual cure of cancer by trypsin, but the scientifically established facts that trypsin has a specific destructive action on the cancer cell and on the deadly ferment that it secretes gives at least a gleam of hope that an effective method of applying the remedy may yet be discovered. The last word concerning the trypsin treatment and the germ cell theory of cancer has not yet been said, and he believes that embryologic and cytologic inquiry points the road for future investigations.

Lancet-Clinic, Cincinnati.

January 18.

22 *Malnutrition in Older Children. A. Friedlander, Cincinnati.
23 *Medical Inspection of Public Schools. F. W. Gavin, Canton, Ohio.
24 Cathartics Hypodermically. E. McKee, Cincinnati.
25 When is Gonorrhea Cured? E. O. Smith, Cincinnati.

22. Malnutrition.—Friedlander gives the etiologic factors of malnutrition as heredity, improper feeding, bad hygienic surroundings, more especially the lack of fresh air due to the fear of "catching cold," and school strain. School children should be kept in the fresh air as long as possible after school hours, open air being much more advantageous than gymnastic exercises. In addition to the ordinary symptoms, the tendency to catarrhal inflammation of the various membranes and the great liability to recurrence of attack, together with anemia and a frequently fretful, irritable, high-strung and precocious temperament, are generally prominent. The treatment, hygienic and dietetic, suggests itself. Medicinal treatment plays a subordinate rôle. Constipation should be corrected. "Hardening," when it hardens, is good and should be urged, the test

as to its value lying in the vigor of reaction. When depression in place of vigorous stimulation results, the process is of course harmful. In regard to medicine, Friedlander has found the iodids, usually given in one of the organic compounds, to be excellent alteratives, especially in recurrent bronchial attacks.

23. Abstracted in THE JOURNAL, Nov. 16, 1907, page 1708.

American Journal of Medical Sciences, Philadelphia.

January.

26 *Diagnosis and Treatment of Cardiovascular-Renal Disease. J. Tyson, Philadelphia.
27 *Treatment of Pneumonia, Especially by Outdoor Air. W. G. Thompson, New York.
28 *The Lenhartz Treatment of Gastric Ulcer. S. W. Lambert, New York.
29 *Diagnosis and Treatment of Gastric Neuroses. W. F. Cheney, San Francisco.
30 Diagnosis and Treatment of Infections of the Biliary Passages, Especially Cholelithiasis and Cholecystitis. J. B. Deaver, Philadelphia.
31 Rupture of the Kidney with Remarks on Conservative Operative Treatment. T. R. Neilson, Philadelphia.
32 Aspiration Drainage in the Treatment of Empyema. W. S. Schley, New York.
33 Roentgen-Ray Treatment of Hypertrophied Prostate. J. W. Hunter, Norfolk, Va.
34 *Treatment of Psychasthenia from Standpoint of Social Consciousness. J. J. Putnam, Boston.
35 Curability of a Rare Form of Nocturnal Petit Mal by Large Doses of Bromid. L. P. Clark, New York.
36 Action of Nitrites on the Heart. W. de B. MacNider, Chapel Hill, N. C
37 Otitis Media and Its Treatment. E. C. Ellett, Memphis, Tenn.

26. An abstract of this article appears in the Department of Therapeutics, in this issue.

27. **Pneumonia.**—Thompson relates his experience with an open-air treatment of pneumonia in the Bellevue and Presbyterian Hospitals, New York City. The treatment is carried out by placing the patient on a balcony or at least at an open window, the air of the ward being more or less excluded by a screen. The balcony floors are of wooden slats and sometimes it was so cold that the sputum froze in the cups. In alcoholic subjects it was found that much less stimulation was required, and it was often possible to do without it altogether. The open-air treatment is to be regarded as an adjunct to the measures usually employed, and the author concludes: With this simple but effective armamentarium one may deal satisfactorily with the greatest number of the more serious cases of pneumonia; but it will be found that much of it, simple as it is, may be unnecessary if the patient has continuous access to fresh, free, flowing air.

28. **Lenhartz Treatment of Gastric Ulcer.**—Lambert gives the results of treatment of gastric ulcer according to the method of Lenhartz in eight cases, which were all of the severer type. All the patients were benefited by the treatment, and, except those with stenosis, all were cured. The routine of Lenhartz was strictly adhered to up to the tenth day, after which some latitude was allowed in the choice of articles of diet. Lambert concludes as follows: This series does warrant the conclusion that the original claims of Lenhartz are correct: First, the cure is at least equally as efficient as the older method, and that it does not deplete the patient; second, the cure is more rapid as well as more certain; third, the vomiting and bleeding stop more quickly and relapse less frequently than in the Leube cure; fourth, the pain ceases promptly and morphin is never needed; fifth, the food supply is sufficient throughout; sixth, it is possible to treat the anemia earlier with iron and arsenic than in the Leube cure; and seventh, it is possible for the patients to return to a full diet and to their usual occupation earlier than in the older cure.

29. **Gastric Neuroses.**—Cheney has classified 574 cases of "stomach trouble" as follows: Secondary to other organic disease, 39; reflex dyspeptic symptoms from other organs, 56; organic disease of the stomach, 104; gastric neuroses, 375. He defines a gastric neurosis as a purely functional disorder of the stomach without discoverable organic change, various functions being usually involved, the most predominant one being that of sensation. He expresses the conviction that over-refinement in diagnosis among these gastric neuroses is not profitable. The etiology involves middle age, in most cases the male sex, abnormalities in the quality, preparation and mastication of the food, and mental conditions unfavorable to digestion. The neuroses develop on a neurasthenic basis. No nationality is exempt, but among the foreign population Cheney found the Italians to predominate. The examination of the stomach contents showed a rather even division between hyperacidity and subacidity. The diagnosis can only be made with certainty by carefully excluding organic disease of the stomach and related organs by repeated physical and chemical examination. The possibility that a case apparently functional may terminate in ulcer or cancer emphasizes the necessity for constant vigilance and repeated investigation. The prognosis as to life is good; as to recovery, it depends on the ability of the physician to control the circumstances and habits of the patient. Treatment should be directed in the first place to the underlying neurasthenia. Freedom from worry, especially at meal times, adequate mastication and rest for a short time after meals, are important. The food should be scrutinized with a view to restriction of the amount and to prevention of habitual overindulgence in certain kinds. The best guide as to the quantity and quality of the diet to be prescribed is furnished by the analysis of the test meal. In hyperacidity, a mixed diet is most useful and three meals a day are usually sufficient. Foods which stimulate secretion, such as meat extracts, spices, coffee and alcohol, should be excluded. In subacidity the opposite course is indicated, the food should be taken in small quantities at short intervals and should consist of rare meats, bread stuffs, condiments, alcohol in moderation, animal broths and meat extracts. Fats, sweets and coarse vegetables should be omitted. Drugs are to be given symptomatically, but only as adjuncts. The following are recommended: For hyperacidity, belladonna and alkalies; for subacidity, bitter tonics, especially nux vomica, and hydrochloric acid; for faulty motility, strychnin; for hyperesthesia, sodium bromid, 20 to 30 grains (1.3 to 2 gm.), and elixir of ammonium valerinate, 1 dram (4 c.c.), given in water after each meal. The various physical methods, such as intragastric electrization, douches and sprays or the hydrotherapeutic applications, have not yielded satisfactory results. Gastric lavage should not be employed as a routine measure. All these measures do harm by keeping the patient's attention directed to the stomach and reminding him of its delinquencies, and in the neuroses this is a direct hindrance to recovery.

34. **Psychasthenia.**—Putnam emphasizes the fact that a human personality includes not only the relations of the individual with one's own body, but also the relations with his fellow-men and his environment generally. The social consciousness must be taken into account, both in the causation and cure of disease. It is important, therefore, for the physician to make use of those emotions aroused by relation to society, and especially to arouse in the patient feelings of loyalty to the social body as well as assurances of sympathy from others. The invalid should be made to feel himself a part of society, to which he still owes the duty of subordinating his own feelings, and, so far as possible, of using his illness in the interests of society at large. Many individuals, by thus becoming useful, lose their obsessions and, to a great extent at least, conquer their disease. The highest discipline of the individual as well as the greatest interest of society may be secured when the patient feels that he is obligated to make his affliction the means of serving his fellow-men. In many cases, these results are obtained under the influence of religious motives, and the physician should be prepared to avail himself of the help of these most powerful agents—religious emotions. Physicians are bound to keep themselves ready to understand the points of view even of those with whom they are not in intellectual sympathy.

Annals of Surgery, Philadelphia.

December.

38 *Carcinoma of the Esophagus. M. G. Seelig, St. Louis.
39 Tonsillar Hemorrhage and Its Surgical Treatment. C. Jackson, Pittsburg, Pa.
40 Lingual Goiter. R. A. Sterling, Melbourne, Australia.
41 Case of Sarcoma of the Thyroid. E. A. Vanderveer, Albany, N. Y.
42 *Narath's Modification of Talma's Operation for Hepatic Cirrhosis. E. R. Corson, Savannah, Ga.

43 *Acute Pancreatitis. W. A. Jayne, Denver, Colo.
44 Primary Fibromyomata of the Broad Ligaments. J. Vance, El Paso, Texas.
45 Renal Catheter as Aid in the Diagnosis of Valve-Like Obstruction of the Ureter. J. A. Sampson, Albany, N. Y.
46 *Conservative Surgical Treatment of Hypertrophy of the Prostate in the Very Feeble and Aged. J. E. Summers, Omaha, Neb.
47 *Epithelioma of the Penis, an Analysis of One Hundred Cases. J. D. Barney, Boston.
48 The Bottle Operation Method for the Radical Cure of Hydrocele. E. W. Andrews, Chicago.
49 Bilateral Tuberculous Bursitis of the Hips. E. O. Thurston, Calcutta, India.
50 The Suspender Abdominal Bandage. The Four-Tailed Genital Bandage. G. S. Peterkin, Seattle, Wash.

38. **Cancer of Esophagus.**—Seelig reports a case in which a double epithelioma of the esophagus was discovered at autopsy, the second growth having been unsuspected during life. The study of this case demonstrates the difficulty of differentiating aneurism of the aorta from carcinoma of the esophagus by means of clinical data; illustrates the formation of multiple metastases in the esophagus; and suggests that these multiple metastases may occur (a) by implantation, (b) through the lymph spaces in the submucosa, (c) by extension into the esophagus from a mediastinal metastasis, (d) by continuous growth above the lymph spaces of the mucosa, and (e) through the lymph spaces of the muscularis.

42. **Operation for Hepatic Cirrhosis.**—Corson considers the question of operation in hepatic cirrhosis, particularly with reference to the respective merits of Talma's operation and Narath's modification thereof. The mortality of Talma's operation is no less than 10 per cent., that of Narath's little or nothing. Corson considers it a mistake to leave any open drainage for the ascitic fluid, as infection is bound to occur sooner or later. As most cases are advanced when the surgeon sees them, Narath's simpler operation offers the best change, even though with a possible, but slight, chance of complication by epiplocele hernia.

43. **Acute Pancreatitis.**—Jayne reports two cases and discusses the anatomy and physiology of the pancreas and the etiology, clinical course, diagnosis and treatment of pancreatitis. He points out that these cases represent the milder form of acute pancreatitis, rather than the hemorrhagic, gangrenous and suppurative forms. This gland is doubtless pathologically subject to the same varying grades of inflammation as other tissues of the body, from simple congestion to the fulminating, often fatal, types. The slighter pathologic changes in an organ so deeply and obscurely placed must ever be difficult, if not impossible, of detection without other aids than we now have. However, the knowledge that these milder inflammatory processes do occur, and the fact that a correct opinion can be arrived at in the severer cases, will keep us alert for its occurrence, so that we shall undoubtedly become able to recognize it earlier than is the case at present.

46.—This article was published in the *Iowa Medical Journal*, September 1907.

47. **Epithelioma of the Penis.**—The following are some of Barney's conclusions drawn from an analysis of 100 cases: Epithelioma is practically the only kind of cancer that attacks the penis. It occurs most frequently during the fifth, sixth and seventh decades. Phimosis is pre-eminently the most exciting cause, so that circumcision can not be too strongly advised. Syphilis and trauma follow next as causes. Relief is usually sought during the first and second year of the disease, but cases of from five to fifteen years' duration are occasionally seen. Pain is present in 43.5 per cent., is rarely severe and occurs late. Enlargement of the inguinal glands occurs in over 75 per cent.; in 60 per cent. it is cancerous; in the remainder it is simple hyperplasia. Glandular involvement may occur early, but the cases studied suggested its late occurrence. Inguinal metastases caused death sooner or later; if well advanced, attempts at removal are to be considered only as surgical vandalism. Invasion of vital organs occurs in over 15 per cent. of cases. Early amputation of the penis at the pubes, with thorough dissection of the groin, is the operation of choice. In the early stages, amputation alone may effect a cure. Splitting the scrotum and transplanting the urethra into the perineum, or total emasculation, offer no greater hope of cure. Sexual power is not necessarily destroyed by amputation of the penis. Melancholia rarely if ever follows the loss of the organ.

Interstate Medical Journal, St. Louis.

December.

51 *Present Clinical Aspect of Stomach Surgery. A. J. Ochsner, Chicago.
52 *Stasis Hyperemia (Bier). M. G. Seelig, St. Louis.
53 Brief Report of First Year's Work at the Clinic for Communicable Lung Diseases of the St. Louis City Dispensary. L. M. Warfield, St. Louis.

51. **Stomach Surgery.**—Ochsner does not claim to bring forth any new or original facts in this paper, but asserts that all methods commented on have been personally tried. He balances with fairness the difference of opinion between physician and surgeon on the vexed question, and gives several reasons showing that neither is likely to be able alone to form a just opinion, because each naturally sees principally the failures and not the successes of the other. In order that this difference may be eliminated as speedily as possible, it seems most important that internists should make a regular practice of witnessing operations on the stomach. Stomach surgery is limited at present to: 1, Closure of defect due to perforation by ulcer, wound or to rupture; 2, the establishment of drainage in obstruction of the pylorus due to neoplasms, cicatricial contraction, indurated ulcer or hour-glass stomach in the adult, and congenital stenosis in children; 3, the removal of neoplasms; and 4, (possibly) the correction of gastroptosis. He goes in detail into each of these groups. It may be stated as an axiom: 1, That certain conditions, like gastric perforation and gastric neoplasms, should receive surgical attention as soon as a diagnosis has been made; and 2, that other diseases of the stomach, like gastric ulcer and its sequelæ, should receive surgical attention whenever it becomes apparent that the condition can not be relieved by dietetic, hygienic and medicinal treatment. In regard to technic, he lays down the following general principles:

> The amount of traumatism must be reduced to a minimum. The intra-abdominal organs must be exposed as little as possible to cold air or cool pads. The patient must be placed in a sitting posture as soon as possible after the operation. In case of closure of perforation, the direction of the wound must be chosen so as not to result in obstruction later as a result of cicatricial contraction. In case of excision of a neoplasm, all the tissue closely connected must be removed with the growth to the greatest extent possible in the presence of existing anatomic relations. In gastroenterostomy the lowest portion of the stomach must be chosen, no matter whether anterior or posterior gastroenterostomy be performed, the latter, however, being preferable. There must be no tension on any sutures in any gastric operation. Except in complete gastrectomy, the coronary artery must always be preserved. In patients with an unusually fat transverse mesocolon, in whom posterior gastroenterostomy is performed, the opening should be torn very large and the edge should be sutured to the stomach in order to prevent obstruction. In case of acute gastric dilatation following any stomach operation, a stomach tube should at once be introduced and gastric lavage be employed, care being taken not to introduce more than one-fourth liter of water at a time. The simplest possible technic should be employed, preferably without the use of mechanical apparatus.

52. **Stasis Hyperemia.**—Seelig traces the origin of the idea developed by Bier, describes the types of hyperemia, outlines its physiologic action, and comments on the clinical results secured. The lessening of pain is based on the same mechanism as is the case in infiltration anesthesia, viz., diminution of irritability of the sensory nerve endings by pressure. The bactericidal action may be due to local accumulation of antibodies, increased phagocytosis, increased alexin power of the blood, increase therein of carbon dioxid, or to increased opsonic index. Whichever one or ones be true, the bactericidal action of hyperemia is demonstrated to be in line with modern teachings on immunity and infection. Increase in absorptive power, the solution of the débris, and the increase of nutrition are dealt with. Seelig has used the method in over 150 cases during the past two years at the Jewish Dispensary, St. Louis, and it has never failed him when properly applied. He has shortened the duration of treatment from 50 to 75 per cent., sparing the patients the pain and discomfort attendant on large granulating wounds and packed sinuses.

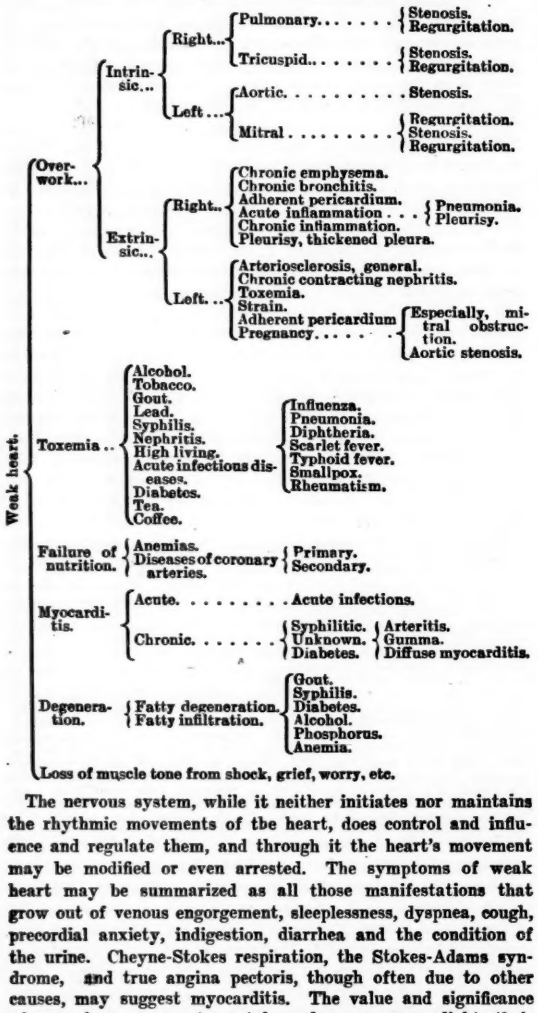
Chicago Medical Recorder.

January.

54 *Diagnosis of Cardiac Insufficiency. G. W. Webster, Chicago.
55 *Modern Surgical Treatment of Exophthalmic Goiter. A. P. Heineck, Chicago.

56 *Clinical Results and Conclusions. J. C. Hollister, Chicago.
57 Certified Milk. I. A. Abt, Chicago.
58 *Virulent Pneumococci Opsonin and Phagocytosis. E. C. Rosenow, Chicago.

54. **Cardiac Inefficiency.**—Webster says that the work of the heart is expended in producing that difference in pressure between the arterial system on the one hand, and the venous system on the other, which is the cause of the circulation of the blood. A high arterial pressure means a low venous pressure, and *vice versa*, other things being equal. The genealogy of weak heart he charts in the accompanying table:



The nervous system, while it neither initiates nor maintains the rhythmic movements of the heart, does control and influence and regulate them, and through it the heart's movement may be modified or even arrested. The symptoms of weak heart may be summarized as all those manifestations that grow out of venous engorgement, sleeplessness, dyspnea, cough, precordial anxiety, indigestion, diarrhea and the condition of the urine. Cheyne-Stokes respiration, the Stokes-Adams syndrome, and true angina pectoris, though often due to other causes, may suggest myocarditis. The value and significance of any signs or symptoms taken alone are very slight, their associations give them importance. Pigmentation of the skin, venous turgescence, arcus senilis, cyanosis or pigmentation of the hands or clubbing of the fingers, disproportionate frequency of the pulse or a slow infrequent pulse, all are of import in the picture. Auscultation should be the last and not the first resort in such cases. The most important questions concerning the work of the heart can be answered without the use of the stethoscope; it should be used to clear up difficulties and to clinch the examination.

55. This article appeared in *Surgery, Gynecology and Obstetrics*, December, 1907, and was abstracted in THE JOURNAL, Feb. 1, 1908, page 401.

56 and 58.—Abstracted in THE JOURNAL, Nov. 23, 1907, pages 1799 and 1800.

Northwestern Lancet, Minneapolis.

December.

59 *Certain Features of the Modern Diagnostic and Therapeutic Aspect of Gastric Ailments. C. L. Greene, St. Paul.
60 Compulsory Education of Tuberculous School Children in State Institutions Combining Educational and Sanatorial Features. F. M. Crain, Redfield, S. D.
61 Accessory Sinuses of the Nose. H. H. Frudenfeld, Madison, S. D.
62 Control of Smallpox. H. M. Bracken, St. Paul.

59. **Gastric Ailments.**—Greene reviews the history of gastrology, which is covered by four decades, and indicates the great advances in the resources of the internalist for diagnosis and treatment. Notwithstanding the great number of ingenious and complicated methods devised, the diagnosis of disease by the examination of the stomach contents is extremely simple in the majority of cases. Töpfer's method may be relied on for the quantitative estimation of acidity, and the nose will suffice for the identification of the organic acids, with the exception of lactic. The microscopic diagnosis is also simple, and the old test with egg digestion is enough for the discovery of pepsin and propepsin. Gastric motility is best determined by the food remnants obtained after a definite time by the stomach tube; and inflation through the tube, replacing the uncertain and unsafe generation of gas by soda and tartaric acid, should be habitually used to determine the position and size of the stomach. The composition and value of foods is much better understood than formerly. The slight nutritive value of beef tea, the proper use of milk, the indications for sugar, and the uselessness of many of the patent breakfast foods are noted. Most important are the studies covering the effects of various foods on gastric and intestinal secretion and motility. The internalist needs to keep clearly in mind the gastric symptoms associated with disease of organs other than the stomach, and to seek for discriminating points to aid him in tracing the symptoms to their proper source. Arteriosclerotic abdominal crises may usually be recognized by tenderness over the abdominal aorta, negative gastric findings, arteriosclerosis elsewhere, and the relief obtained by theobromin, sodium salicylate or strophanthus. Tabes should always be excluded by the examination of the reflexes. Dietl's crises are not of renal causation, save in the rarest instances, but must be referred to gallstones, appendicitis or pyloric spasm associated with the accompanying gastroptosis. The relations of gastric symptoms with gallstones and with appendicitis and the methods of distinguishing the true seat of the lesions have received insufficient attention in the literature. Greene believes that too many patients have been operated on for an appendix, not wholly normal, in which the greater part of the symptoms were due to overlooked disease of other organs. Nervous spasm of the pylorus may simulate ulcer and lead to needless operation. The secondary nature of the gastric disease depending on organic disease of the heart should be recognized, as well as that of most cases of gastritis. Gastroptosis may give rise to error and gastric syphilis is more frequent than is usually supposed. Greene has seen three cases in which the symptoms were suggestive of carcinoma. In carcinoma he is a firm believer in surgical exploration and appropriate operation. The recognition of early cases is facilitated by the observation of a steadily waning degree of acidity with progressive dyspeptic symptoms in connection with progressive loss of weight, increasing weakness, and an extraordinary resistance to all forms of treatment. Gastric ulcer is undoubtedly far more often a relatively symptomless condition than is generally understood, and its symptoms are most marked the nearer it approaches the pylorus. Gastric neuroses should be carefully investigated, and it should be remembered that neurasthenic symptoms may accompany gastric ulcer or even carcinoma. The stomach tube is here the means of avoiding useless operation on the one hand and harmful conservatism on the other. Greene has been impressed by three therapeutic facts, namely, that rest, hospital care, and rational diet are the best therapeutic agents in nearly all gastric ailments, and that without these the treatment of many gastric lesions of the nervous type and gastric ulcers must yield indifferent or deplorable results; and, further, that three-fourths of the functional cases encountered are due to poor nutrition and are usually kept active or smouldering by chronic starvation. The

cases suitable to surgical treatment are more limited in number than surgeons in general would believe. They comprise carcinoma in the early stage and ulcer cases complicated by obstructions or adhesions, and cases of organic stenosis in which medical means have failed. Greene believes that surgeons should require more exact diagnoses and that statistical information as to the final outcome of cases in which patients have been operated on is urgently required. "The present status of gastroenterostomy leaves little to be desired on the side of technic and immediate mortality, but lacks everything in the line of statistics of the sort that test the value and determine the worth and permanence of a radical procedure." "The element of mere suspicion has been too large a factor in the surgery of the stomach."

Vermont Medical Monthly, Burlington.

January.

63 *Causes of Death. C. F. Dalton, Burlington.
64 *Cystoscopy and Catheterism of Ureters as Valuable Aids in Diagnosis and Treatment. A. L. Miner, Bellows Falls.
65 Flatfoot. J. C. Wilson, Hartford, Conn.

63. Causes of Death.—Dalton discusses the sources of error in the nomenclature of disease and finds them to be twofold: the creeping in of localisms, and the temptation to be specific, even though inaccurate. On the other hand, there is a lack of specific statement as to contributing causes whereby one might grasp the pathologic situation, even though the chief cause given be indefinite or unsatisfactory. He cites as instances of indefinite terms, septicemia, anemia, marasmus athrepsia, inanition, asphyxia, debility, catarrh, dropsy, heart failure. He draws the following conclusions: In those diseases due to intoxication death is nearly always determined by some form of degeneration of the heart muscle, and thus affected, the cardiac action grows weaker and weaker until it finally ceases. In a less number of cases, the same result is attained by local death of the nerve centers through degeneration or imperfect circulation, or by excitation of the inhibitory nerves. Death may also be caused by failure on the part of the blood to furnish the needed supplies of oxygen and food. This may be due either to diminished volume of blood following hemorrhage or effusion, or because the blood is filled with other products, chemically or physically combined, as in uremia, and can not carry the normal constituents. The lungs may become filled with inflammatory or edematous products to such an extent that the air is entirely eliminated. Internal respiration then ceases, and we call the condition asphyxia. Effusions or foreign growths may interfere mechanically with the action of both heart and lungs and prevent circulation and respiration. Suffocation or mutilation of vital organs may also mechanically cause death.

64. Abstracted in THE JOURNAL, Dec. 7, 1907, page 1949.

Buffalo Medical Journal.

January.

66 Treatment of Cancer. W. B. Jones, Rochester, N. Y.
67 *Danger of Pregnancy Following Operation for Cancer of the Breast. W. S. Cheesman, Auburn, N. Y.
68 Relation of Hyperchlorhydria to Motor Function of the Stomach. A. A. Jones, Buffalo.
69 Ophthalmia Neonatorum: A Pathologic Anachronism. F. P. Lewis, Buffalo.

67. Pregnancy and Cancer of the Breast.—Cheesman points out that whatever be the nature of cancer when situated in the female breast, it is influenced by sympathetic correlation of the pelvic organs. The most important function of these organs is gestation. Cancer may attack the breast during gestation, or pregnancy may occur as a complication of an already existing cancer. In either case, there is apt to be a stimulation of the disease to great malignancy and rapidity of growth. Cheesman reports two cases respectively illustrating these two conditions. In the second case, in which pregnancy occurred after an operation for removal of cancer of the breast, the patient asked why, if pregnancy was likely to determine a recurrence, she had not been warned. The author asks why physicians have not warned such patients of the danger of pregnancy, and remarks that a search through the literature has failed to indicate a recognition of the fact.

Journal of the Missouri State Medical Association, St. Louis.

January.

70 *Stricture of the Rectum. W. J. McGill, St. Joseph.
71 *Malignant Disease of the Rectum. F. Reder, St. Louis.
72 Law Governing the Practice of Medicine. C. B. Hardin, Kansas City.
73 Attitude of the Public Toward the Doctor. H. S. Crawford, Harrisonville.
74 The Eye and the Nervous System. A. E. Derwent, Clinton.

70. Stricture of the Rectum.—McGill discusses congenital stricture, neoplastic stricture, spasmodic, and inflammatory stricture. The inflammatory strictures comprise simple (which are divided into diffuse inflammatory, cicatricial and perirectal strictures), tuberculous, dysenteric, and syphilitic inflammation. Treatment is usually surgical, though antisyphilitics are to be used in the syphilitic form. The surgical means at command are dilatation, internal and external proctotomy, excision, colostomy, and anastomosis around the stricture. He discusses these individually and describes their special applications.

71. Malignant Disease of Rectum.—Reder says that it is his practice now to establish an inguinal anus in all cases in which the involvement is so extensive as to necessitate the resection of the coccyx, or still more, a resection of a portion of the sacrum, for the removal of the cancerous bowel. His reasons are three-fold, (1) avoidance of septic trouble by direct contact of the wound with fecal matter; (2) the diversion of the fecal current from the diseased portion of the bowel; (3) the obviation of the necessity of locking the bowels for from ten to fourteen days after operation. The chief objection to this operation seems to come from the patient, but Reder holds that when it comes to dealing with cancer and the question of life prolongation the surgeon on whom the responsibility rests should be the one to decide what is best for the patient. An intelligent patient will ordinarily abide by the surgeon's suggestion. In the other event, it is safer for the surgeon not to operate at all. He considers the objections that have been urged, and states that much of the success of rectal incision in the advanced stage of cancer depends on the effectiveness of the measure embodied in the technic to prevent sepsis, and he believes that the interest of the patient will be best served by establishing a permanent inguinal anus in connection with excision of the rectum.

Pennsylvania Medical Journal, Athens.

December.

75 Address on Twenty-Fifth Anniversary of St. Luke's Hospital, South Bethlehem, Pa. W. L. Estes, South Bethlehem.
76 *Relation of Headache to Affections of Eye. S. D. Risley, Philadelphia.
77 *Neurologic Conception of Headache. E. E. Mayer, Pittsburg.
78 Headache Due to General Diseases. J. C. Wilson, Philadelphia.
79 Headaches Due to Nasal and Accessory Cavity Disease. B. A. Randall, Philadelphia.
80 Radical Cure of Vernal Conjunctivitis. L. W. Fox, Philadelphia.
81 The Eye and the Pelvis. C. P. Franklin, Philadelphia.
82 *Easy Method of Making Osteoplastic Flaps in Cranial Surgery. J. B. Roberts, Philadelphia.
83 *Repairing of Clefts of Palate and Lip. A. R. Craig, Philadelphia.

76. Headache.—Risley discusses the relations of diseases or anomalies of the ocular apparatus to headache, of which such disease or anomalies are often the sole and sufficient as well as the unsuspected cause. Even when other conditions capable of inducing headache are present, they do not necessarily exclude the eye from being also a factor in the production of headache. Whether or not it is a factor can be settled only by demonstration of the absence of abnormal ocular conditions or in their presence by the skilful correction of errors of refraction or binocular balance without relief to the headache. Moreover, prolonged eyestrain sets up pathologic states in the fundus which require time for subsidence after removal of the cause, so that immediate relief can not always be expected. Risley considers the location of the pain, the various manifestations, the relation to acute illness, the development of headache in men of affairs between the ages of 40 and 50, and the neurotic element dependent largely on environment.

77. Id.—Mayer says that in considering organic headache the neurologist asks that disease of the special sense organs be

eliminated, as manifestly such conditions must not be in question when valuing headache as a symptom in nervous diseases. On the other hand, the neurologist's services are often requisite to appraise headache as a symptom in diseases not of nervous origin. He considers in detail the neurologic relations of headache in regard to eyestrain, oral disease, nasal disease, and exophthalmic goiter, and discusses its importance also in relation to neurasthenia and hysteria, tuberculous meningitis, anemia and epilepsy. Even in headache due to disturbances of the nervous system, the physician can not ignore body chemistry and must treat general conditions which, if present, may in themselves cause headache.

82. Abstracted in THE JOURNAL, Nov. 2, 1907, page 1549.

83. Abstracted in THE JOURNAL, Oct. 26, 1907, page 1464.

Archives of Pediatrics, New York.

December.

84 Bacteriology of Meningitis. F. S. Churchill, Chicago.
85 *Proteid in Infant Feeding; Necessity of a Standard. T. G. Allen, Chicago.
86 Variation in Fat-Content of Cow's Milk. E. H Bartley, Brooklyn, N. Y.
87 Case of Vomiting with Acetonuria and Fatty Metamorphosis of the Liver. A. W. Myers, Chicago.
88 Estivoautumnal Fever in a Child of Two and a Half. R. O. Clock, Philadelphia.
89 Sarcoma in Kidney in Children, with Report of Case. W. Shannon, New York.
90 The Exudative Diathesis of Czerny. A. Hymanson, New York.
91 Case of Retropharyngeal Abscess in Girl of 11. H. B. Carpenter, Philadelphia.

85. **Proteid in Infant Feeding.**—Allen considers that there is nothing more important for the physician than to rid his mind of the fear of proteid in infant feeding, and to ask daily how much proteid, not what percentage, the baby gets daily, and how much he should get. He establishes a standard daily minimum and maximum proteid as 0.65 ounces proteid to repair waste, and 0.20 ounces for growth, making 0.85 ounces the minimum daily proteid. This he applies as follows: One ounce of good milk contains 4 per cent. of proteid, or 0.04 of an ounce. Therefore, the standard minimum daily proteid will be supplied by 1 ounce of good milk for each pound of the baby's weight, and the maximum daily proteid quotient, which was placed at 6, is supplied by 1.5 ounces of milk. This application holds good whether the milk used be whole milk, skim milk, buttermilk, top milk, or a mixture of cream with either whole milk or skim milk—in fact for any undiluted milk.

West Virginia Medical Journal, Wheeling.

January.

92 Atropin Poisoning. S. L. Jepson, Wheeling.
93 The Medical Department of the West Virginia University. J. W. Simpson, Morgantown.
94 Extraperitoneal Rupture of the Bladder with Report of Cases. J. E. Cannaday, Hansford.
95 Compulsory Vaccination vs. State Aid for Smallpox. S. S. Staunton, Villa.
96 Alleged Malpractice Defense. H. V. Varner, Clarksburg.
97 Freyer's Operation After Suprapubic Cystotomy. E. A. Hildreth, Wheeling.

Louisville Monthly Journal of Medicine and Surgery.

January.

98 The Contagiousness of Cancer. T. L. Butler, Louisville.
99 Influenza and Some of Its Complications. F. C. Simpson, Louisville.
100 Erythema Nodosum. J. E. Hays, Louisville.
101 Case of Veronal Poisoning. T. H. Stucky, Louisville.
102 Complications of Influenza as We See Them in the Treatment of Diseases of the Eye, Ear, Nose and Throat. A. O. Püngst, Louisville.

Indiana Medical Journal, Indianapolis.

January.

103 President's Address Before Indianapolis Medical Society. O. G. Pfaff, Indianapolis.
104 Prevention and Treatment of Ophthalmia Neonatorum. H. C. Parker, Indianapolis.
105 Case of Diffuse Sarcoma of Intestines and Kidneys. C. Sudranski, Greencastle.
106 Case of Spina Bifida—Operation and Recovery. E. E. Padgett, Indianapolis.

Bulletin of Johns Hopkins Hospital, Baltimore.

January.

107 Major James Carroll. H. A. Kelly, W. H. Welch, W. S. Thayer, Baltimore, and G. M. Sternberg, H. H. Donnally, A. F. A. King, S. Ruffin, C. E. Munroe and J. O. Skinner, Washington, D. C.
108 *Maternal Mortality in the First Five Thousand Obstetric Cases at the Johns Hopkins Hospital. F. C. Goldsborough, Baltimore.

108. **Maternal Mortality at Johns Hopkins Hospital.**—Goldsborough states that in the 5,000 cases there were 55 maternal deaths, representing a gross mortality of 1.1 per cent. The fatalities were divided into the following groups:

Etiology.	Number of Deaths.	Percentage. of Gross. Mortality.	Percentage. Proportion of all Deaths.
1. Infections	21	0.42	38.18
2. Toxemias	16	0.32	29.09
3. Hemorrhages	8	0.16	14.54
4. Miscellaneous.	10	0.20	18.18

In Group 1, 12 patients were infected before admission to the department. One patient had coitus during labor and was not examined by vagina. In two others, midwives had made repeated vaginal examinations. Thus, 6 cases remain in which the department was responsible for the fatal infection, representing a mortality of ⅛ of 1 per cent. In Group 2 there were 16 deaths, divided as follows: Eclampsia, 12; nephritis, 2; toxemic vomiting of pregnancy, 2. The mortality from eclampsia was 25 per cent., which should be considered favorable in view of the fact that the majority of the patients were admitted in coma. In Group 3 there were 8 deaths. Four of these were due to placenta prævia, and in 3 of them the patient was moribund on admission. In the fourth case, death resulted from incomplete rupture of the uterus due to manual dilatation of the cervix. The dangers incident to accouchement forcé in this condition make it less preferable than the employment of a slower method of cervical dilatation such as the inflated rubber bag. The remaining 4 deaths from hemorrhage were associated with rupture of the uterus in 3 cases and with Porro Cesarean section once. In Group 4 there were 10 deaths, distributed as follows: Intestinal obstruction, 3; typhoid, 1; pneumonia, 1; amebic dysentery, 1; thrombosis, 1; embolism, 1; exophthalmic goiter, 1; anesthesia, 1.

International Clinics, Philadelphia.

Vol. IV, Seventeenth Series.

109 Treatment of Tetanus by Intraspinal Injections of Magnesium Sulphate, with Report of Four Cases. J. N. Henry, Philadelphia.
110 Comparison of Value of Roentgen Irradiation and Administration of Arsenic in Treatment of Leukemia. A. S. Warthin, Ann Arbor, Mich.
111 Etiology and Treatment of Hemoptysis in Pulmonary Tuberculosis. A. P. Francine, Philadelphia.
112 Action of Injections of Fresh Blood Serum in Blood States that Give Rise to Hemorrhage. P. E. Weil, Paris, France.
113 Five Years' Experience with an Antityphoid Serum. A. Chantemesse, Paris, France.
114 Common Cardiac Arrhythmias and Their Clinical Significance. A. W. Hewlett, San Francisco.
115 Urgency of Early Diagnosis of Cancer of the Stomach. A. McPhedran, Toronto, Canada.
116 Study of Gastroptosis from the Radiographic Standpoint. H. K. Pancoast, Philadelphia.
117 Tuberculous Meningitis with Special Reference to the Spinal Fluid. G. C. Robinson, Philadelphia.
118 Infantal Pseudoleukemic Anemia, Splenic anemia, Polycythemia with Splenomegaly and Chronic Cyanosis, Leukanemia, Aplastic Anemia. J. M. Swan, Philadelphia.
119 Ocular Reaction to Tuberculin. A New Means of Diagnosing Tuberculosis in Man. G. Calmette, Lille, France.
120 Case of Sarcoma of a Retroperitoneal Undescended Testicle Strangulated by a Twist. R. G. Le Conte, Philadelphia.
121 Fractures of the Femur. H. P. Sights, Paducah, Ky.
122 Surgical Syphilis. C. G. Cumston, Boston.
123 Peritoneal Pseudomyxoma in a Man, Secondary to Cystic Disease of the Appendix. G. McConnell, St. Louis.
124 Cases of Perforation in Typhoid Operated on at the Pennsylvania Hospital. C. F. Mitchell, Philadelphia.
125 Tuberculosis of Lymph Glands in Children. J. H. Jopson, Philadelphia.
126 Treatment of Dysmenorrhea by Forcible Dilatation of Cervical Canal and Application of the Wylie Drain. H. D. Beyea, Philadelphia.
127 Pathogenesis of Syncytioma Malignum. F. K. Green and Q. W. Hunter, Louisville, Ky.
128 Management of Pregnancy. J. W. Wainwright, New York.
129 Immunity and Vulnerability. C. D. Palmer, Cincinnati, Ohio.
130 Torsion of the Testicle. E. M. Corner, London, Eng.
131 Improvement in the Method of Determining Presence or Absence of Gonorrheal Infection in an Inflamed Prostate or Seminal Vesicle. E. Ballenger, Atlanta, Ga.
132 Chronic Joint Disease in Children. W. B. Johnston.
133 Right-Angled Contraction of the Tendo Achillis as a Cause of Stumbling and Halting in Children. A. H. Tubby, London.
134 Case of Torticollis, Probably Congenital. A. Newlin, Philadelphia.
135 Occupation Neuroses: Pain, Rather than Cramp, the Prominent Symptom of this Disorder. G. L. Walton, Boston.
136 Disorders of Sleep. P. Stewart, London, Eng.
137 Unilateral Hemorrhage in the Medulla, Followed by Syringomyelic Sensory Disturbances—Syringobulbia. A. Gordon, Philadelphia.
138 Thiosinamin in the Treatment of Deafness. M. Lermoyez, Paris.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London.

January 11.

1 *Bacterial Infections of the Urinary Tract in Childhood. C. R. Box.
2 *The Infectivity of Cancer. A. T. Brand.
3 Anomalous Reactions Obtained in Testing Urine for Sugar with Fehling's Solution. H. MacLean.
4 Ferments and Their Mode of Action. A. Ransome.
5 Case of Paraplegia Due to an Intramedullary Lesion and Treated by Removal of a Local Accumulation of Fluid. W. B. Warrington and K. W. Monsarrat.
6 Salts of Alkaline Earths which Affect the Coagulability of the Blood. J. B. Nias.
7 Case of Echinococcus Disease. A. M. Sorabji.
8 *Sudden and Complete Inversion of the Uterus; Its Probable Causation. A. Maude.
9 Blood Coagulability in the Puerperal State. R. H. Fox.

1. Urinary Bacterial Infections in Childhood.—Box discusses descending and ascending urinary affections in childhood. He considers that the common cause of bacilluria is due to an ascending infection, a view which is corroborated by the sex incidence of the disease. It is twice as common in females as in males. The commonest infection is that of the colon bacillus. This bacillus is frequently present in the urine of children suffering from thread worms, which suggests that scratching may be in part the medium of infection. The clinical manifestations of infection of the urinary passages in childhood may be pyelitis, cystitis or incontinence of urine without obtrusive evidence of local inflammation. The possibility of the presence of pyelitis should always be borne in mind when dealing with cases of obscure fever in childhood, whether of a sustained, remittent, or of a relapsing character. Cystitis of a more or less acute character is not at all uncommon in childhood. In incontinence the course of the disease appears to be not altogether afebrile. Slight elevation of temperature at night, rarely over 100 F., may occur for weeks at a time. The cystitis of childhood, when caused by the colon bacillus, calls for a guarded prognosis. Some cases, especially those with acute onset and marked bladder symptoms, clear up under the simplest medicinal and dietetic treatment. Others, however, drag on sometimes for months. If, as the author believes, ascending infection is the cause of these conditions, the importance of frequent bathing and of the avoidance of urethral contamination from the anus as preventive measures can not be overrated. Vulvitis should be promptly treated. The milder cases of cystitis, pyelitis, and incontinence of urine do well with the ordinary treatment by full doses of potassium citrate, combined with sedatives of the belladonna group. The first care should be to determine the absence or presence of thread worms. The time to give injections for them, if found, is just after the bowels have acted. Drug treatment seems to be disappointing. Box does not appear to have had much success with serum therapy.

2. Cancer.—Brand discusses the various cancer hypotheses: 1, Intrinsic origin, of which the number is legion; and 2, extrinsic origin, in which the question is: autogenesis or exogenesis? Brand believes cancer to be transmissible from one individual to another, either directly or indirectly by the agency of a specific micro-organism, either a bacterium or a protozoon. He considers the instances of so-called transplantation in animals, and holds them to be true infection, since not only does the transplanted material grow, but the characteristic evolution of malignant disease follows. The strongest argument in favor of the exogenesis of cancer lies in its undeviating method of growth and dissemination by proliferation and metastasis and autoinoculation. Brand holds that the autoinoculation of cancer requires no proof, being an indisputable self-evident characteristic of the malady; for every metastasis is a true autoinoculation, as well as every so-called recurrence. That which has been removed can not recur; that which was left behind continues to grow. He examines the question as to whether the carcinoma cell can be the true parasite, and concludes that that is impossible. He considers the investigations that have been made with reference to the parasite of cancer, and thinks that the analogy of the *Spirochæta pallida* and syphilis certainly suggests the spirochetan causation of cancer. He suggests that the examination of fresh living carcinoma cells on the warm stage of the microscope would result in much additional and valuable information, as would also the employment of high-power microscopy. He discusses the channels and mode of infection, and in point of prophylaxis urges, among other things, the supersession of earth burial by cremation. He considers that, sooner or later, we may expect to find that a carcinoma of epithelial origin has been observed to give rise to a sarcoma in adjacent connective tissue; thus confirming the dictum that cancer is a specific infectious disease and that one specific micro-organism is capable of originating every variety of malignant neoplasm, the variety depending on, and only limited by, the anatomic diversity of the structure and the situation of the tissues invaded.

8. Inversion of the Uterus.—Maude reports the case of a young woman in her third labor in whom the uterus was found completely inverted, lying outside the vulva. The thinness and frailty of the cord suggested that it would probably have been broken had much traction been exercised by the midwife in charge of the case, which fact supported her statement that she had not employed such traction. The polar position of the placenta was absolute, thus confirming Hennig's view that the active cause of this disaster is an absolutely polar attachment of the placenta.

British Medical Journal, London.

January 11.

10 *Hospital Treatment of Morbid Pregnancies. J. W. Ballantyne.
11 *Bacteriologic Aspects of Neuropathic Keratitis. H. M. Davis and G. Hall.
12 Plea for Improvement in the Teaching and Encouragement in the Study of Legal Medicine. J. J. Buist.
13 *Cancer, Its Etiology and Treatment by Trypsin. J. Alcindor.
14 *Use of the Seton in Certain Intractable Nervous Conditions. T. W. Parry.
15 Pathology of Diabetes. H. J. McNabb.
16 The Source of Ova. L. Appel.
17 Cancer of Pylorus and Liver: Fatal Hemorrhage. A. C. Lambert.
18 Depression of Skull During Delivery. H. South.
19 Birth in a Caul. C. R. A. Sutton.

10. Prematernity Hospitals.—Ballantyne narrates the history of the idea of a hospital devoted to the care of pregnant women in reference to the diseases to which they are liable in that state. This led to the establishment of the Hamilton bed at the Edinburgh Royal Maternity and subsequently of others elsewhere. He details the cases treated in the Hamilton bed: hydramnios with vomiting, hyperemesis gravidarum, epilepsy (?) in pregnancy, three cases of eclampsia, albuminuria in pregnancy, etc. From his experience he suggests, with regard to prematernity beds in maternity hospitals, that the beds should be reserved for cases of morbid pregnancy; that the supervention of labor within forty-eight hours of reception should exclude the cases from the category of prematernity cases; that the beds should be placed in a ward by themselves, under the supervision of a nurse with surgical training. Different food is required by prematernity and maternity patients. In these cases special attention should be paid to the urine, blood, nervous, and ophthalmoscopic examinations. Suitable cases are pregnant patients suffering from albuminuria, heart disease, intractable vomiting, pulmonary disease, hepatic disease, anemia and blood disorders, epilepsy, hysteria, chorea gravidarum and paralysis, disease of the reproductive organs themselves, hydramnios and other diseases, suspected ectopic gestation, hydatid mole, etc. Also suitable are patients who have suffered in the past from habitual abortion, fetal death or disease, or eclampsia. Unsuitable cases are those with infectious fevers, and perhaps syphilis, though Ballantyne thinks that gonorrheal vaginitis and vulvitis might be taken and treated during pregnancy.

11. Neuropathic Keratitis.—Davies and Hall conclude from their investigations that for the production of neuropathic keratitis three factors must be present: 1, Removal of the Gasserian ganglion; 2, the presence of the bacillus; 3, a factor of undefined nature dependent on the eyelids and removed by closing them. The first factors are not adequate alone, as suture of the lids prevents or cures neuropathic keratitis. The first and third are not adequate alone, because keratitis only

occurs after destructive lesions of the Gasserian ganglion when the organism is present and in the same proportion of patients as that in which the organism occurs in normal persons.

13. **Trypsin in Cancer.**—Alcindor reports two cases of cancer treated with trypsin by Beard's method. He concludes that lowered vitality from any cause is the predisposing factor in malignant disease and chronic irritation the determining factor; and further, that trypsin is of considerable value. He claims also that gout, rheumatoid arthritis, and chronic rheumatism ought to be treated by injections of trypsin when other better-known methods have failed. Amylopsin, whether used alone or with trypsin he has found of no value.

14. **The Seton.**—Parry refers to the benefit of the seton in certain obscure nervous affections, e. g., migraine, Ménière's disease, and also to a case of Dr. Pratt's of a child suffering from symptoms of a cerebellar tumor in which a remarkable recovery for nearly two years has ensued on the use of the seton. This instrument, he believes, under aseptic conditions and management, is now going to play an important rôle in the treatment of obstinate conditions of nervous origin, hitherto regarded as incurable and which help to swell the ranks of christian science and other similar devotees. He describes a new seton knife needle intended to lessen the friction in the passing of the seton.

Medical Press and Circular, London.

January 8.

20 Psoriasis: Its Clinical and Microscopic Characters, Diagnosis and Treatment. A. Whitfield.
21 Teaching of Practical Midwifery. W. Smyly.
22 *Diagnosis of Chest Disease. J. Hay.
23 Acute Pancreatitis and Multiple Fat Necrosis. F. G. Bushnell.

22. **Chest Disease.**—Hay, in illustration of the difficulties encountered in the diagnosis of chest disease, reports four cases: 1, Actinomycosis of the lung simulating pulmonary tuberculosis; 2, sarcoma originating in the root of the lung and involving the left bronchus, encircling the aorta, paralyzing the left vocal cord and infiltrating the left auricle; 3, a small centrally placed empyema, not discovered by frequent exploratory aspirations, the diaphragm being perforated by the pus which pointed below the costal margin; and 4, pulmonary syphilis, with fibrosis about the roots of the lung, marked dyspnea, cough, recurring hemoptysis, few physical signs and cardio-pulmonary murmur audible at the open mouth.

Clinical Journal, London.

January 1.

24 Surgical Diseases of Children. A. H. Tubby.
25 Pneumonia and Its Complications. (To be continued.) H. Mackenzie.

January 8.

26 Empyema in Children. A. E. Garrod.
27 *Practical Value of Blood Pressure Estimation. L. Williams.
28 Pneumonia and Its Complications. (Concluded.) H. Mackenzie.

27. **Blood Pressure.**—Williams' article is intended to demonstrate that the manometer is not merely a pretty toy with which the *dilettanti* may suitably amuse themselves, as has been wickedly suggested, but that it is a true workman's instrument of immense practical utility, on whose verdict the most momentous issues may often depend. He discusses the various methods of estimating blood pressure: 1, By the manometer—mercurial (Riva Rocci or modification) or alcoholic (Oliver); 2, by pulse stability; 3, by the tactile estimation of blood pressure by compressing a single artery. In point of trustworthiness there is little to choose between the mercurial and the alcoholic manometer, though as to portability and durability the latter has the preference. The second method named depends on the fact that in the normal individual the pulse rate while standing is from six to ten beats faster than while recumbent. Increase of this difference means loss of tone in peripheral arteries, undue vasodilatation, low blood pressure; abolition or serious diminution means excessive tone of peripheral arteries undue vasoconstriction, high blood pressure. A reversal of the difference (slower rate standing than recumbent) indicates definite organic disease in the arteries over a considerable area, with permanently high blood pressure. The method of estimation by palpitation of the radial or other artery is altogether bad, because the tactile sense is capable of estimating total force only; no education can render it capable of estimating total force per unit of surface. As instances of the practical value of blood pressure estimation, Williams points out that gout is always associated with high blood pressure, tuberculosis with low blood pressure. In certain dermatologic states and in certain subacute arthritides the manometer will distinguish for us between gout and tuberculosis. While the manometer is absolute, however, in high blood presure, it is not so positive in the case of low blood pressure, because in self-preservation the medulla, when the heart is at fault, will order a vasoconstriction, and when the arteries are at fault will increase the number of systoles, to keep the blood pressure above the level essential for life. In low pressure, therefore, it is desirable to investigate the stability of the pulse. Other symptoms in which absolute differentiation as to causation may be made by the blood pressure are dyspnea, epistaxis and hemoptysis. Albuminuria again is a condition in which the testimony of the blood pressure is essential to sound judgment. Albumin appears in the urine whenever the kidneys are passively congested; its importance is usually grossly exaggerated, because it is commonly associated almost entirely with organic kidney trouble. Albuminuria due to kidney disease is usually accompanied by high pressure, while that due to other causes is commonly not so accompanied. The two conditions demand diametrically opposite treatment, so that the diagnosis is a matter of the utmost importance. Similarly, accuracy of diagnosis is of the highest importance between true neurasthenia, from real exhaustion of the nervous centers, in which blood pressure is low, and the exactly corresponding symptom-complex, due to absorption of toxins from the gastrointestinal canal, in which blood pressure is high. Post-influenzal conditions also require the same discrimination. In all these classes of cases to apply the stimulant, tonic, hypernutrient treatment in the high-tension form, or the relaxing, underfeeding, sedative, vicariously eliminant method in the low tension form will be fraught with disaster.

Journal of Tropical Medicine and Hygiene, London.

December 16.

29 *Preliminary Report on Calcium Chlorid in Treatment of Hemoglobinuric Fever. W. H. Deaderick.
30 *Lactic Acid Ferments in Treatment of Tropical Diseases. A. S. Gubb.
31 Case of Blackwater Fever on Board a British India Ship. H. Emlyn-Jones.
32 Visit to the Tropical School at Hamburg. F. M. Sandwith.

29. **Calcium Chlorid in Hemoglobinuric Fever.**—Deaderick reports four cases of blackwater fever treated by him by Vincent's method, viz., with calcium chlorid. But little can be concluded from a report of only four cases, but as there were two deaths and two recoveries, he failed to derive the benefits claimed by Vincent. The patients who died were persons not more undermined by malaria than is ordinarily the case in those attacked with blackwater fever. Death moreover in each case was not due to syncope, but to the hemolysis which calcium chlorid is used to combat. He nevertheless recommends more extended trial.

30. **Lactic Acid Ferments in Tropical Diseases.**—Gubb eulogizes the lactic acid ferment treatment by means of sour milk or the various well-known fermented milks, in infantile diarrhea, intestinal fermentation, tropical diarrhea, dysentery, and the various forms of gastric and enteric disease common in hot countries. He cites a few cases of Brochet's showing the promptness of the antiferment action to be not less remarkable than its completeness. The curdled milk may be prepared by mixing a specified quantity of boiled milk (even condensed milk will answer) with the powdered ferment or a suitable quantity of the bouillon culture in a suitable warm chamber for from eight to ten hours, by which time the milk will be curdled. Any supernatant liquid is decanted off and the product put into a cool place. It keeps good about two days. The organisms being robust and quite innocuous to the human being, oust the butyric and other irregular organisms and inhibit every form of fermentation except their own. This treatment is useful also in furunculosis and recurrent abscess. It is recommended as a prophylactic, since intestinal fermentation paves the way to all the infective intestinal conditions

that prove so fatal in hot countries. If the milk is too acid a little sodium citrate or bicarbonate or magnesium carbonate may be added.

Intercolonial Medical Journal of Australasia, Melbourne.

November.

33 Exophthalmic Goiter—Partial Thyroidectomy Under Local Anesthesia. T. P. Dunhill.
34 *Pneumococcal Infections in Children. A. J. Wood.
35 Acidosis and Acute Fatty Degeneration After Laparotomy. G. A. Syme.
36 Six Cases of Stovain Spinal Anesthesia. H. R. Duncan.
37 Ludwig's Angina—Tracheotomy. W. H. Tregear.
38 Acute Lymphatic Leukemia. E. H. Spowers.
39 Simple Method for Quantitative Determination of Proteids in Milk. A. J. Wood.

34. Pneumococcal Infections in Children.—Since pneumococci in pneumonia are found circulating in the blood stream, a pneumococcal invasion of the blood must be regarded as a form of septicemia, usually manifesting itself doubtless in croupous pneumonia, but able to manifest itself in other ways. Wood reports cases to illustrate the septic power of the pneumococcus.

Journal of Obstetrics and Gynecology of the British Empire, London.

January.

40 *Pathologic Changes Affecting the Endometrium; a Contribution Toward Their Classification. E. H. B. Macdonald.
41 *Supports of the Pelvic Viscera. W. E. Fothergill.
42 Case of Cerebral Hemorrhage During Pregnancy. R. Jardine.
43 Case of Osteomalacia Treated by Cesarean Section at Full Term, with Removal of Uterus and Ovaries. Id.
44 Case of Prolonged High Temperature During Pregnancy, with Other Symptoms of Toxemia. Id.
45 Recent Developments in Gynecologic Surgery. E. H. Tweedy.

40. The Pathology of Endometrium.—Macdonald, from her investigations, concludes that the endometrium is to be regarded as an unstable tissue, subject to great physiologic variation, readily affected by disorders of neighboring tissues, readily responsive to stimulation, but only rarely the seat of primary disease. Malignant disease of the body of the uterus is comparatively rare; simple tumor formation is uncommon; chronic infective endometritis is commoner than these, but still not common by comparison with the number of other conditions for which curetting is practiced. In the great majority of cases in which the uterus is scraped, the endometrium has played a merely passive part in the pathologic changes, although its removal may be a justifiable and even necessary part of the treatment. She presents the following clasification of certain broad groups of endometrial change, avoiding merely symptomatic or histologic subdivisions and disregarding histologic changes presumably devoid so far as is known of significance:

I. Conditions arising from decidual and fetal retention.

SIMPLE.	MALIGNANT.
Simple inflammatory reaction.	Chorioepithelioma.

II. Endometritis of infective origin.
Acute.
Chronic. 1. Puerperal.
2. Gonorrheal (syphilitic).
3. Tuberculosis.
4. Septic (from operative procedures, etc.)

III. Secondary changes.
1. Chronic edema. Mucous polypus.
General hyperplasia.
2. Chronic venous congestion.
3. Increased vascularity.

IV. New growth.

SIMPLE.		MALIGNANT.
1. Simple adenoma. Papilloma.	Glandular overgrowth.	1. Malignant adenoma.
2. Papillary glandular hyperplasia.		2. Adenocarcinoma.
3. Stroma overgrowth.		3. Sarcoma.

41. Pelvic Floor.—Fothergill summarizes his conclusions as follows: 1. The so-called ligaments of the uterus lie loosely on the subjacent structures, and have no supporting action. The broad ligament is simply a mesovarium and mesosalpinx. The uterosacral and uterovesical folds are incapable of resisting downward pressure, as is the round ligament, which moreover is a vestigial structure (*gubernaculum ovarii et uteri*). 2. The external muscular layer of the pelvic floor has a sphincteric rather than a supporting action. 3. The internal muscular layer of the pelvic floor being the degenerated representative of the tail muscles of lower animals, has largely lost its muscular action, and the lower part of the levator ani merely acts as an adjuvant to the sphincters of the rectum and the sphincter vaginæ. 4. The classical descriptions of the pelvic fascia should be given up, and the fascia should be regarded as the sheaths of the muscles, the vessels, and the viscera. 5. The internal muscular layer, with its fascial investment, forms the funnel-shaped pelvic diaphragm. 6. The pelvic diaphragm does not support the pelvic organs by its muscular action. 7. The pelvic diaphragm could not support the pelvic organs in virtue of its shape, were they not firmly attached to its sloping lateral walls. 8. This attachment is accomplished by the fibrous sheaths of the blood vessels and accompanying structures which supply the pelvic viscera. The one constant essential cause of prolapse is relaxation of the perivascular sheaths. 9. The rectum has attachments to the back of the pelvis quite distinct from those of the urogenital organs to its sides. It does not descend with them in prolapsus. When the anterior rectal wall descends in rectocele it is united with the posterior vaginal wall by cicatricial tissue, the result of infection during the healing of perineal tears.

Presse Médicale, Paris.

January 1, XVI, No. 1, pp. 1-8.

46 Reflex Pulse Disturbances in Appendicitis. (Ralentissement, Arythmie, Accélération.) A. Broca.
47 Exercises of the Neck. (Gymnastique de la région cervicale.) P. Desfosses.
48 Automatic Gag and Tongue Depressor. (Ouvrebouche. Abaisse-langue.) G. Mahu.

January 2, No. 2, pp. 9-16.

49 Bacteriologic Examinations in Surgery. F. Daels.
50 Evacuation of the Stomach According to Cannon's Works. J. P. Langlois.

Revue de Chirurgie, Paris.

December, 1907, XXVII, No. 12, pp. 669-808.

51 *Hyperostosis Following Ablation of Periosteum. (Ostéomes musculaires.) V. Cornil and P. Coudray.
52 *Simple Inflammatory Affections in and Around the Sigmoid. (Sigmoldites et périsigmoldites.) M. Patel. Commenced in No. 10.
53 Histologic Structure and Embryonal Origin of Mixed Tumors of the Salivary Glands. G. Massabuau. Commenced in No. 10.

51. Hyperostosis Following Ablation of Pericsteum.—Cornil and Coudray discuss the question whether experimental osteomas and traumatic myosteomas in man are the result of new growth of connective tissue or of muscle tissue. They cut a flap of periosteum from the tibia of dogs and implanted it in the muscles in the front of the leg, utilizing the same incision for the two procedures. The results of these and other experiments and clinical experience confirm the fact that the connective tissue of the muscles under the influence of trauma is capable of producing bone tissue. The "periosteum theory" explains the formation of muscular osteomas when they develop after a trauma in connection with the bones of the region. But it does not explain the myosteomas that develop in the muscles apart from all connection with the bones.

52. Inflammatory Processes in and Around the Sigmoid.—Patel treats acute nonsuppurative sigmoiditis with ice and opium to immobilize the intestines and soothe the pain, as in acute appendicitis, not allowing any food during this time. An oil purgative may be given the third or fourth day, in small, repeated doses. This is the best means of emptying the intestine with the least risk for the intestinal walls. The pulse, temperature, meteorism and intestinal functions should be investigated every day. After the acute phase is past the patient should be treated as for colitis, with topical applications. Tincture of iodin may hasten the disappearance of the local process. Suppuration demands surgical intervention, and he discusses the best technic for the various locations of the abscess. In case of subacute perisigmoiditis failure of medical measures imposes the necessity for operative treatment. Chronic inflammation in and around the sigmoid requires the same treatment as mucomembranous enterocolitis, except when signs of obstruction compel operative measures. He summarizes sixty-eight cases from the literature and two from his own experience, classifying them under various headings and appends a bibliography of 128 articles, including some published in THE JOURNAL.

Semaine Médicale, Paris.

January 1, XXVIII, No. 1, pp. 1-12.

54 Abnormal Multiplicity of the Heart Sounds. (Bruits du coeur.) L. Bard.
55 Family Syndrome of Multiple Telangiectases with Recurring Hemorrhages.

Archiv für Verdauungs-Krankheiten, Berlin.

XIII, No. 6, pp. 577-671.

56 *Pathology and Treatment of Gastric Ulcer. Diagnostic Significance of Hyperacid Stomach Content. (Magengeschwür.) V. Rubow.
57 Physiologic and Pathologic Smallness of the Stomach and the Radiologic Determination of Shriveling. (Kleinheit des Magens.) S. Jonas.
58 *Benefits of Oil Treatment of Ulcers and Stenosis of the Pylorus. W. Bloch.
59 Lack of Gastric Mucus, Its Pathologic Importance and Relations to Hyperacidity and Gastric Ulcer. (Mangel an Magenschleim-Amyxorrhœa gastrica.) J. Kaufmann.
60 *Nervous Hyperacidity and Hypersecretion of the Stomach and Their Relations to Congenital Atony. (Nervöse Superacidität und Supersekretion des Magens.) G. Graul.

56. Hyperacidity of Stomach Contents in Relation to Ulcer.—Rubow describes a number of typical examples of apparent hyperacidity when in reality the collection of acid was partially the result of impaired evacuating power. There was generally hypersecretion also, as was shown by the finding of a copious secretion of gastric juice in the fasting stomach, in the morning. It is probable that the limit between normal and morbid secretion in these cases lies somewhere near the finding of 120 c.c. of stomach content or more—with an acidity of 80, an hour after an Ewald test breakfast. In another form of assumed hyperacidity the amount of stomach content is very much less; instead of 120 or 300 c.c. we find only from 10 to 60 c.c. of stomach content. In five cases of this kind reported in detail there were no symptoms to attract attention to the stomach; one patient had a wandering kidney, another neurasthenia with obstipation, another periostitis of the tibia, and two had chronic enteritis with diarrhea, but all had a very small amount of highly acid stomach content an hour after the Ewald test breakfast. Such cases show that hyperacidity does not necessarily entail symptoms, and that other factors must cooperate to produce the so-called hyperacidity disturbances. Examination of the stomach content before the close of the hour revealed that the trouble in these cases was merely exaggerated motor functioning of the stomach; the chyme was passed along so fast that the gastric juice secreted toward the last had only a small amount of stomach content to act on, and it thus appeared extraordinarily acid although no more than the normal proportion of gastric juice had been secreted during the hour. These findings explain the cases of nervous dyspepsia with hyperacidity. As Faber pointed out six years ago, the real trouble calling for treatment is an often overlooked intestinal affection, instead of the assumed gastric dyspepsia. It is probable that the excessive motor functioning of the stomach, passing along partly digested food into the intestines, may finally have an injurious influence on the intestines, as the work normally done in the stomach has to be done in the intestines, if done at all. In the diagnosis of a chronic gastric ulcer, it is important, therefore, to determine the form of the hyperacidity. A very small, highly acid gastric content should not be included in the chain of symptoms testifying to the probability of an ulcer. Hypersecretion can be assumed only when the stomach content is large and acid.

58. Oil in Treatment of Ulcer and Stenosis of the Pylorus.—Bloch relates his experience with nineteen cases of gastric ulcer or pyloric stenosis in which great benefit was derived from small amounts of oil, taken three times a day. It was remarkable, he states, how rapidly the pain was relieved and the debilitated patients recovered strength. This was most evident in the cases of enlargement of the stomach from spasm of the pylorus. Almost complete cure was realized in a few cases of severe stenosis, as this treatment restored the working capacity of the patients. All were outpatients, and some continued at work throughout the treatment. In private practice he prefers oil of sweet almonds, changing after two weeks, if the patients desire, to "almond milk," that is, an emulsion of a tablespoon of pulverized sweet almonds in a glass of hot water, ingested warm, with peppermint drops afterward if desired. In winter he prefers an emulsion, made with or without belladonna, according to the following formula:

℞.	gm.		
Tincturæ belladonnæ	5		ʒi
Olei amygdalæ dulc	30	or	ʒi
Vitelli ovi uni			
Aquæ destillatæ ad	200		ʒvi

M. f. emulsio. Sig.: A tablespoonful three times a day.

The proportion of oil can be increased or reduced according to the severity of the case. In some cases he gives pure olive oil or linseed oil. He reviews the history of oil treatment of gastric affections, and states that it should be given a thorough trial in all cases before deciding on operative measures.

60. Nervous Hyperacidity and Its Relation to Congenital Atony.—Graul regards a stomach content of from 75 to 100 c.c., an hour after an Ewald test breakfast, as indicative of abnormal conditions, and that hypersecretion may be accepted when the amount ranges from 100 to 200 c.c. Hyperacidity alone, he declares, does not cause subjective disturbances. For this there must be some inflammatory affection of the mucosa, exposure of nerve fibers, as in an ulcer, or enhanced irritability of the stomach from any cause. In these conditions the hyperacidity disturbances may appear although the acidity remains within normal limits. Atony of the stomach is merely an expression for the condition in which it stretches unduly easily, and constitutional atony seems to be generally accompanied by hyperacidity. In these conditions the size of the meals must be reduced and only extremely digestible food allowed, anything that tends to overload or stretch the stomach being avoided. The diet must be regulated according to the laws of mechanics and hydrostatic pressure, with protracted rest in bed, and repose in every case after eating.

Beiträge zur Klinik der Tuberkulose, Würzburg.

VIII, No. 4, pp. 309-371.

61 Carcinoma of Mamma Complicated with Tuberculosis. A. Fricke.
62 *Ocular Reaction to Tuberculin. P. Eisen.
63 *Tuberculin Treatment of Pulmonary Tuberculosis. O. Amrein.
64 *Artificial Pneumothorax and the Opsonic Index. H. Pigger.
65 The Non-acid-proof Forms of Koch's Tubercle Bacillus. (Die nicht säurefesten Formen des Kochschen Tuberkelbazillus.) H. Much.
66 Psychophysical Disturbance of Balance. (Psychophysische Gleichgewichtsstörung.) Kraemer.

62. Ocular Reaction to Tuberculin.—Eisen reports that a positive reaction was obtained in 66.6 per cent. of 45 patients with certain tuberculosis, the proportion being 78.9 per cent. in the early stages and declining to 50 per cent. in the most advanced cases. In 11 entirely healthy persons the response was invariably negative, but it was positive in 31.1 per cent. of 17 patients with various non-tuberculous affections. The reaction in the eye subsided harmlessly in all but 2 cases, and in these the patients had suffered from conjunctivitis in youth. The reaction in these cases was so severe that the aid of an ophthalmologist had to be sought.

63. Tuberculin Treatment of Tuberculosis.—Amrein reviews his experience with 11 patients treated with Deny's tuberculin, 10 with Koch's old tuberculin and a few with tuberculin of another make. He followed the Goetsch cautious technic and was much pleased with the results. With cautious dosage and properly selected cases, he states, tuberculin is proving an essential aid in treatment of tuberculosis, especially as an adjuvant to physical, dietetic and climatic measures. He found that after a change from one make of tuberculin to another improvement sometimes made rapid strides. The tuberculin treatment sometimes started the patient again on the road to health after the measures previously applied seemed to have reached the limits of their efficacy.

64. Artificial Pneumothorax and the Opsonic Index.—Pigger reports the particulars of five cases of pulmonary tuberculosis in which the diseased lung was completely immobilized by compression from a pneumothorax artificially induced by injection of nitrogen. The opsonic index became permanently higher in the cases in which the lung was successfully compressed and no tuberculous complications developed. After wavering a little, the opsonic index presented the features characteristic of a healing lesion. The immobilization and compression of the diseased lung evidently alter the circulation of blood and lymph, at first promoting absorption from the foci, but later reducing

it. Thus autoinoculation in its best form follows complete compression, the positive opsonic phase becoming permanent. His experience teaches further that the artificial pneumothorax should not be restricted to severe cases of unilateral phthisis, but should be applied even in mild cases, when other measures fail to induce appreciable benefit. A permanently low or wavering opsonic index is a valuable aid in determining the indications for this form of intervention. The other lung must be sound or only slightly affected, with an inactive focus, to realize any benefit from the compression.

Berliner klinische Wochenschrift.

January 6, XLV, No. 1, pp. 1-44.

67 *Management of Childbirth with Contracted Pelvis. (Geburt bei engen Becken.) R. Olshausen.
68 *Method for Hastening Normal Delivery. (Methode zur Abkürzung normaler Entbindungen.) T. Landau.
69 Abnormally Large Brains. (Echte Megalencephalie.) D. v. Hansemann.
70 *Case of Stone Formation in the Lungs. (Fall von Steinhusten.) A. Bickel and E. Grunmach.
71 Negative Influence of Baths Containing Radium Emanations on the Gas Interchanges in Man. H. Silbergleit.
72 *Clinical Importance of Serum Diagnosis of Syphilis. (Klinische Leistungsfähigkeit der Serodiagnostik bei Lues.) H. Mühsam. Id. F. Karewski.
73 Congenital Fistulas of Lower Lip. F. Unterberger.
74 *Differential Diagnosis of Torsion of Cystic Tumors of Female Genital Organs from Appendicitis. E. Ranzi.
75 The Latest Methods of Pharmacologic Research. (Neuere pharmakologische Forschungsmethoden.) T. A. Maass.

67. Management of Childbirth with Contracted Pelves.—Olshausen reviews the management of delivery with various forms of contracted pelvis, and emphasizes the fact that ergot should never be given until the head or breech has reached the floor of the pelvis and the birth is thus under control. Even then, great caution and diligent auscultation are necessary to recognize injury to the fetus and to act accordingly. Quinin is liable to improve the uterine contractions or start them if they have become arrested, and this action suggests the necessity for being very cautious in regard to administration of quinin during a pregnancy. A hot bath is sometimes advised to promote labor, but he has not beheld much benefit from it, and thinks that there is grave danger of infection from the water when the os is dilated. In case of pendulous abdomen or when the uterus is abnormally long, good effects are sometimes realized from bandaging up the abdomen or making the patient lean far back. The forceps can be used without great risks only when the head stands in the superior strait with its largest periphery. If it has been impelled thus far there is reason to hope that the forceps can aid in its onward passage. This is allowable in case there is instant danger for mother or child, or when labor has entirely ceased and further delay seems inadvisable on account of the mother's rising temperature or similar grounds. The danger of crushing of the soft parts, with subsequent gangrene and vesical fistula, can not be estimated beforehand. In case of non-descent of the head, the forceps should never be applied for more than six or eight tractions. If there is no appreciable progress in delivery after this, the forceps should be discarded and perforation or a pelvis-enlarging operation be done. The child, after these attempts at forceps extraction, is probably either dead or dying, and the mother is in grave danger if not delivered at once. In conclusion, he comments on the various operations to enlarge the pelvis, adding that pubiotomy has won a place for itself beyond question, but that until the indications and technic are better understood it should never be attempted outside of a hospital.

68. To Hasten Normal Deliveries.—Landau thinks that there is no reason why an ordinary childbirth should not be hastened, and suggests instead of immediate resort to surgery that the obstetrician should aid in the natural dilatation of the cervix, by helping to stretch it and striving to push it back over the protruding head. This attempt should be made only when labor pain is in progress. This mild and harmless intervention will materially hasten the expulsion of the fetus, but delivery must be already well under way and the head fixed in the pelvis. The latter condition is indispensable, as otherwise the skull might be deflected and the presentation take an unfavorable turn. The maneuver must be done with gloved hands and absolute asepsis be otherwise observed. Danger of laceration is averted by gentleness and working along the lines of least resistance. Instrumental dilatation works with blind force and is liable thus to injure the parts. He calls attention to the fact that the procedure acts not only by mechanically stretching the cervix, but also by so irritating the nerves that the labor pains are stimulated.

70. Calculi in the Lungs.—The patient in the case illustrated was a woman of 35 who for the last five years had occasionally coughed up "stones," from the size of a large pinhead to that of a pea.

72. Serum Diagnosis of Syphilis.—Mühsam states that not an instance is known to date of a positive reaction to the serum diagnosis in the entire absence of a history of syphilis. It is undoubtedly a specific reaction, but it does not invariably occur even when syphilis is known to exist. Negative results may be obtained when the syphilis is completely cured or when no complement-binding substances have been formed, and, possibly, also refractory cases may be encountered or there may be a negative phase in respect to the reaction. Karewski remarks that the serum diagnosis may not be found very valuable in general practice, but that it may be of fundamental importance in certain cases, especially in those of medicolegal import and for differentiation of inherited syphilis, but most of all, perhaps, from the standpoint of the surgeon confronted with lesions apparently demanding intervention but which the serum reaction differentiates as syphilitic. Negative findings are not conclusive.

74. Differentiation of Torsion of Ovarian Cyst from Appendicitis.—Ranzi reports four cases of small ovarian tumors with symptoms suggesting appendicitis as the pedicle became twisted. Palpation findings were dubious and the symptoms of irritation of the peritoneum might have been referable to the appendix as well as to the torsion of the pedicle. The cause of the trouble was differentiated before operation only in one case, and then by pains in urinating. The sudden onset of the pain might have served as a differentiating sign, if heeded. In three of the cases the torsion had evidently occurred a few times before, but had spontaneously subsided; the symptoms at these times had been accepted as indicative of mild attacks of appendicitis. In one case appendicitis coexisted with the ovarian tumor. It is important, Ranzi says, in operating for appendicitis to examine the genital organs and to have the patient understand beforehand that it may prove necessary to remove some of them.

Centralblatt für Chirurgie, Leipsic.

January 4, XXXV, No. 1, pp. 1-32.

76 *Superheated Air in After-Treatment of Abdominal Operations. (Heissluftbehandlung nach Bauchoperationen.) Gelinsky.
77 *Improved Technic for Transplantation of Skin Flaps. (Die Transplantation betreffend.) Lanz.
78 Osteoplastic Resection of Ankle. (Osteoplastische Fussgelenkresektion.) A. Tietze.

76. Superheated Air in After-Treatment of Laparotomies.—Gelinsky applies superheated air to the abdomen for twenty minutes, once or twice a day, after a laparotomy. Among its advantages are the prevention of adhesions, the promotion of absorption and, especially, the stimulation of peristalsis. Both the clinical course and the subjective findings were improved by this systematic heating of the region. One patient, a man with pleurisy and ascites, was treated with the superheated air for two months after tapping, and recovered his health completely with no signs of recurrence during the five months since. In 13 aseptic laparotomies one application of the superheated air was followed by normal bowel functioning. In 2 out of 11 cases of gangrenous appendicitis with perforation, chronic peritonitis with adhesions developed, with persisting high fever, but with from two to four applications a day of the superheated air, the patients all left in good health in about a month. In 4 cases of soiling of the abdominal cavity with fecal matter during resection of the intestine or matter from an abscess, the patients recovered without the slightest reaction on the part of the peritoneum after rinsing with salt solution and application of superheated air. This experience has convinced Gelinsky that the superheated air certainly aids the peritoneum in its struggle against invading infection.

77. **Improved Technic for Skin Transplantation.**—Lanz cuts a long Thiersch skin flap and divides it into two long pieces. Each piece is then stamped with a stamp which cuts a row of transverse incisions down the center of the flap, with at the same time a parallel row of incisions on each side, extending from the edge about a third of the way across, between the central incisions. By taking hold of the ends of the flap it can be pulled out to two or three times its former length, like the paper accordeons cut by kindergarten children. One of the flaps thus pulled out is applied to the defect to be covered, while the other piece is applied in the same way to the space left bare by cutting the flap. In this way both wounds soon heal and they heal simultaneously; the small open spaces all through the flaps rapidly skin over.

Centralblatt für Gynäkologie, Leipsic.

January 4, XXXII, No. 1, pp. 1-32.

79 Etiology of Puerperal Retroflexion of the Uterus. R. Olshausen.
80 Technic of Abdominal Total Hysterectomy for Cancerous Uterus. L. Seeligmann.
81 Light as a Disinfectant. (Licht als Desinfiziens.) K. Franz.
82 *Surgical Treatment of Contracted Pelvis for Permanent Enlargement of the Pelvis. (Chirurgische Behandlung der Beckenstenosen durch ständige Erweiterung des Beckens.) G. Lerda.

82. **Permanent Enlargement of the Pelvis.**—Lerda proposes an osteoplastic operation which he has found simple and practical in experiments on the cadaver, and which he advocates as a systematic measure, without waiting for term, for all pelves too small to allow normal delivery. A rectangular incision through the body of the pubis allows the lower part to slip toward one side while the upper and median part of the bone remains undisturbed in its connection with the symphysis. He adds that if this simple operation is repeated on both sides the pelvis can be enlarged to an astonishing extent without impairment of its solidity. The article is illustrated.

Deutsche medizinische Wochenschrift, Berlin.

January 2, XXXIV, No. 1, pp. 1-48.

83 Functional Solidarity of Both Halves of the Heart. (Funktionelle Solidarität der beiden Herzhälften.) F. Kraus and G. Nicolai.
84 *Cure of Experimental Tsetse-Fly Disease—Nagana. F. Loeffler and K. Rühs.
85 *Operations for Cancer in Stomach or Intestines in the Light of Internal Medicine. (Krebs des Magendarmkanals.) I. Boas.
86 Indications for Administration of Yoghurt—Bulgarian Clotted Milk. (Wirkungsweise von Yoghurtkuren und ihre Indikationen.) C. Wegele.
87 *Recent Progress in Diagnosis of Heart Affections. (Diagnostik der Herzkrankheiten.) A. Hoffmann.
88 *Operative Treatment of Hyperacidity. (Zur Lehre von der Hyperazidität.) D. Balas.
89 *Treatment of Ulcus Molle and Buboes. C. Kreibich.
90 Antitoxin for Treatment of Circulatory Disturbances in Diphtheria Intoxication. (Kreislaufstörung bei Diphtherievergiftung.) A. Iwanowa.
91 *Dangers of Pasteur Treatment. (Kann die antirabische Pasteursche Impfmethode gesunde Tiere durch Lyssa töten?) C. Fermi.
92 *Leucocyte Count in Differentiation of Extravasation of Blood and Suppuration. Wieting.
93 The Apparent Death of Louis XI. (Scheintod Ludwig IX d. H.) W. Ebstein.
94 Development of a Sarcoma After Transplantation of a Carcinoma. L. Loeb.
95 Cosmetic Treatment of Nevi and Telangiectases. K. Ogata.

84. **Cure of Experimental Trypanosomiasis.**—Loeffler and Rühs announce that experimental nagana can be positively cured by the simultaneous administration of a single adequate dose of arsenic acid by the mouth plus atoxyl subcutaneously. The toxic action of the two does not have a cumulative action. Favorable results can also be attained by administering the arsenic acid by the mouth and rubbing the atoxyl into the skin in a salve. There seems to be a prospect that administration of the arsenic acid by the mouth and also in inunctions plus atoxyl subcutaneously is destined to prove the most effectual means of combating trypanosomiasis, and that arsenic acid by the mouth may prove an effectual means of prophylaxis. Experiences with arsenic eaters and with animals seem to demonstrate that the system can be thus safely impregnated with arsenic.

85. **Treatment of Cancer of Stomach or Intestines.**—Boas reviews his own experience and that of the Mikulicz clinic, which show that the best results of operative treatment were not obtained in the cases in which the shortest interval had elapsed between the first symptoms and the operation, but in the cases with the longer intervals. This surprising fact, he says, is due to the superior malignancy of the cancers which cause such convincing symptoms so early that the necessity for operative treatment is recognized at once. He does not believe that we shall ever be able to recognize cancer of the digestive tract in its incipiency. An exploratory laparotomy in dubious cases has too many objections for it to be generally applied. The task of the internist, aside from the perfecting of his diagnostic measures, is to select more wisely the cases to be referred to the surgeon. When the surgeons obtain more carefully selected cases, then the results of operative treatment, both immediate and remote, will become very much better. Better results on the part of the surgeon will in turn influence patients and their families to accept operative measures more readily. When physicians refer to the surgeons all their available cancer patients, regardless of the malignancy of the growth, the surgeon's statistics make a bad showing in comparison with what they might be if the internist weeded out the cases in which operative treatment has no chance of permanent success. Boas comments on the improvement in the results at the Mikulicz clinic in late years; 30 per cent. of the patients with cancer of the stomach survived for more than three years, and 10 of the patients are living still, five years after the operation. With carcinoma of the colon the proportion of survivors was 34 per cent., and Kocher reports a mortality of only 17.7 per cent. in 122 cases of carcinoma of the stomach, and no mortality in a series of 19 cases of uncomplicated resection of the stomach.

87. **Progress in Diagnosis of Heart Affections.**—Hoffmann reviews the various diagnostic measures that have been introduced or perfected during the last few years. Among them he mentions with approval Goldscheider's suggestion to have the patient lie on the side for palpation of the apex of the heart. The findings are especially instructive in case of a hypertrophied or dilated heart, as the apex changes its consistency. He ascribes marked movability of the heart to incipient arteriosclerosis. The "threshold" percussion method, with which the names of Goldscheider and Ewald are connected, shows strikingly the point where the dulness begins or stops. The finger is bent at a right angle and the stroke is made on the epiphysis of the distal phalanx, the aim being to make the stroke as light as can be heard, just at the threshold of audibility. Study of the heart sounds and murmurs by auscultation of the esophagus has shown that the symptom of gallop rhythm is not so ominous as heretofore supposed. Both transient and permanent gallop rhythm have been observed when the heart was otherwise perfectly competent. Orthodiagraphy of the heart has given instructive findings. Telephotography is a still simpler method of obtaining the correct outline of the heart. Rosenthal has succeeded in inducing rays of great penetrating power which cast the shadow of the heart on the plate from a distance of six or more feet. This technic excludes all subjective errors. The von Recklinghausen technic is commended as the most reliable for determination of the blood pressure. The diastolic blood pressure is demonstrated by the oscillations of the manometer, while the systolic is determined by the partial or complete vanishing of the pulse under the palpating finger. Israel has pointed out that both the systolic and diastolic blood pressures are almost constantly permanently increased in chronic interstitial nephritis. The Katzenstein technic of compression of the femoral arteries may prove valuable when more thoroughly studied. The "string galvanometer" is proving a useful method of studying the behavior of the cardiovascular system. The right arm and left foot are connected with the poles of the string galvanometer, that is, with the ends of a thick platinum wire or silvered quartz string, and the string is carried into the field of a powerful magnet and arranged so that the string is drawn out of the field of the magnet when it receives the electric impulse. Typical curves are thus obtained from the electrocardiograms produced by the vacillations of the string, synchronously with the pulse, as registered on a photographic registering apparatus. Cremer was able to obtain instructive findings in this way by way of the esophagus,

and he was able to register the fetal heart action. Variations from the normal curve seem to be typical of certain heart disturbances. The diagnostic measures mentioned above have been duly chronicled in THE JOURNAL as published.

88. **Hyperacidity.**—Balas reports three cases of persistent, uncomplicated hyperacidity of the stomach cured by gastro-enterostomy. There were no indications of stenosis of the pylorus or of ulcer. The findings in these cases confirm Katzenstein's assertions in regard to the favorable influence of the operation in that the bile and pancreatic juice regurgitate into the stomach and neutralize the acidity, besides reducing the secretion of gastric juice by reflex action.

89. **Treatment of Ulcus Molle and Bubo.**—Kreibich states his preference for copper sulphate for cauterization of venereal ulcers, the main point being to induce with a single application the sloughing off of all the morbid tissue, leaving a clean surface. This can be hastened by dressings moistened with 1 to 1,000 copper sulphate. Every effort must be made to prevent the spreading of the sore to the lymphatics, enforcing hygienic measures, avoidance of straining, violent movements, etc. If the regional lymph glands become involved, bed rest is unconditionally indicated and antiphlogistic measures. The application of a cupping glass, according to Bier's technic, relieves the pain to a remarkable extent, after a small incision has been made at the most painful point. The glass must be large enough to rest on sound tissue all around, and should be applied for an hour daily. Patients can go around without pain after one such application, even in case of a large bubo, and this technic shortens the period of disability. In case the bubo has involved several glands, operative treatment is generally required and the interval before intervention can generally be hastened by moist heat, or, better still, by injection of a 1 per cent. solution of benzoate of mercury. General anesthesia is required for extensive lesions, but the measures should be as conservative as is compatible with complete removal of all morbid substance. The tampon must not be too tight.

91. **Dangers of Experimental Pasteur Treatment of Rabies.**—Fermi relates experiments which showed that mice and rats are liable to develop rabies after Pasteur treatment, and that preventive treatment does not always ward off infection when the animals were inoculated later with the virus. He ascribes these results to varying virulence of the material used in Pasteur treatment, and thinks that this treatment is liable to be fraught with danger for man. To avert these dangers he has given up the Pasteur technic, and now uses only a 5 per cent. emulsion of fresh fixed virus, sterilized with carbolic acid. He adds that the superiority of vaccine thus made has been demonstrated by long parallel series of experimental researches with this and the Pasteur technic, and by a year's experience in the clinic.

92. **Leucocyte Count for Differentiation of Suppuration.**—Wieting reports five cases in which the leucocyte count enabled an aseptic internal hemorrhage to be differentiated from a suppurative process or infected hematoma. In one case the symptoms indicated suppuration after a laparotomy for a stab wound, but the leucocytes numbered only 7,500, and the patient recovered under expectant treatment, as in the second case, after abdominal trauma. In the third case there were indications of a suppurating hemothorax after a bullet wound of the lung. The leucocytes numbered 7,800 on the fourth day, rose to 11,000 on the sixth, but then dropped with the temperature, the dulness gradually subsided, and the patient was discharged in good health by the third week. In another case of bullet wound of the lung the leucocytes numbered 25,000 and an abscess was found in the lung. In a case of traumatic hernia of the diaphragm the leucocytes rose to 11,250 the twelfth day after the operation and operation revealed infected blood clots in the thorax.

Medizinische Klinik, Berlin.

January 5, IV, No. 1, pp. 1-38.

96 Arteriosclerosis. C. von Noorden.
97 Precocious Menstruation. W. Stoeltzner.
98 *Pathology and Treatment of Bronchial Asthma. A. Strümpell.
99 Poisoning from Inhalation of Fumes of Anilin Oil. (Anilinölvergiftung.) P. Krause.
100 Intravenous Injection of Drugs in General Practice. (Einspritzung von Heilmitteln in die Blutbahn.) E. Franck.
101 *Treatment of Exophthalmic Goiter by Erb, by Bier, and by Kocher. (Umfrage über die Behandlung des Morbus Basedowii.)
102 Catalysis in Its Relation to Medicine. H. Schade.

98. **Bronchial Asthma and Its Treatment.**—Prof. A. Strümpell of Breslau explains bronchial asthma as the result of a peculiar phase of secretion and exudation in the mucosa of the bronchioles. It is evidently a vasomotor and secretory process, due to some morbid predisposition on the part of the secreting cells in the mucosa, which allows them to get suddenly into this morbid condition from some comparatively insignificant cause. The morbid vasomotor and exudative conditions are revealed by the peculiar characteristics of the sputum expelled after an attack, although in some cases the process may not progress far enough to be followed by much expectoration. The conditions in the bronchioles seem to be similar to those of urticaria, which has many features in common with bronchial asthma. He thinks it probable also that similar conditions are liable to prevail in the mucosa of the digestive tract, and suggests that the condition known as "colica mucosa" may be of this nature. He relates excellent results in treatment of bronchial asthma with measures to induce sweating. He has completely cured by this means eleven patients with bronchial asthma of many years' standing, but adds that another patient did not seem to be benefited. Ordinary measures to induce sweating are useful, but the best results were obtained with local or general incandescent electric light baths. He generally begins with five-minute local exposures, with 6 or 10 lights, applying the bath daily and increasing to a maximum of fifteen or twenty minutes, or he begins at once with the general bath with 40 lights. After the bath, the patient steps at once into a hot-water bath, to clean the skin of sweat, and then goes to bed for two hours to cool off gradually. The course usually requires from four to six weeks, but some patients considered themselves cured in two weeks. None of his patients has returned with recurrence during the several years since he has been applying this treatment.

101. **Treatment of Exophthalmic Goiter.**—Erb treats exophthalmic goiter along the same lines as neurasthenia. In one of the severest cases in his experience the patient was cured by several winters spent in the Engadine. He regards a sanatorium environment at an altitude of from 2,400 to 5,400 feet as by far the most effectual measure in the majority of cases. Among drugs he places most reliance on arsenic, long continued and repeated, with "tonic pills" (iron, quinin and nux vomica), to alternate with the arsenic. Bromids are indispensable, but he warns against iodids and digitalis, preferring strophanthus in case of heart neuroses. He does not accept a scientific basis as proved yet for thyroid or surgical treatment, and avoids them unless the condition becomes unbearable without operative intervention. Bier, on the other hand, operates in every case of exophthalmic goiter in which the affection is not so far advanced that improvement is improbable. The immediate and ultimate results have been excellent, even in cases in which the changes in the heart were so severe that the patient was extremely emaciated, with frequent syncopes. He agrees with Kocher that the physician makes a great mistake in not referring to the surgeon the mild and incipient cases of exophthalmic goiter, as these show such great benefit from operative measures. The postponement of intervention, Kocher states, not only makes the operation more dangerous, but it allows the system to become saturated with the toxins elaborated. He asserts that the danger of the operation has been exaggerated, as surgeons have allowed themselves to be persuaded into operating in advanced stages of the affection, and have not always borne in mind the fact that certain special simple precautions are required in these cases.

Münchener medizinische Wochenschrift.

January 7, LV, No. 1, pp. 1-56.

103 *Relations Between Typhoid and Paratyphoid Infection and the Biliary Passages. (Beziehungen des Typhus und Paratyphus zu den Gallewegen.) J. Forster.
104 *Cutaneous Tuberculin Test in Children. (Kutane Tuberkulinprobe im Kindesalter.) E. Feer.
105 Orthodiagraphic Study of Position of Heart in Pathologic Conditions. (Herzlagerung.) H. Deitlen.
106 Etiology of Orthostatic Albuminuria in Children. L. Jehle.

107 Specific Hemolysis by Isotonic Salt Solutions. von Dungern and Coca.
108 Case of Paratyphoid Cholecystitis. A. Lorey.
109 *Typhoid Bacilli Carriers in Insane Asylums. Grimme.
110 The Question of Typhoid at Munich. (Zur Typhusfrage.) Mandelbaum.
111 Experiences at Bumm's Clinic with Constriction Hyperemia, "Weichting," Superheated Air, and Vibratory Massage in Gynecology. (Neuere Behandlungsmethoden auf dem Gebiete der Gynäkologie.) E. Runge.
112 Treatment of Lysol Poisoning. H. Feldmann.

103. **Relations Between Typhoid and Paratyphoid Infection and the Biliary Passages.**—Forster reviews the recent literature on the subject of the constant passage of typhoid bacilli into the biliary passages and the possibility that they may settle there permanently. He thinks that these newly learned facts compel the physician to direct his efforts in treatment of typhoid and paratyphoid infection so that no persisting biliary affection will develop. The future will teach how this can best be done, but such measures must certainly be instituted early in the disease. In respect to typhoid bacilli carriers, he deems it probable that the disappearance of the bacilli from the stools accompanies the spontaneous healing of the gall-bladder lesion. Gallstones may be voided, and conditions thus realized which favor spontaneous cure of the biliary affection. In one case in his experience a gallstone attack—the first—was followed by the disappearance of the typhoid bacilli from the stools. No measure has proved effectual in treatment of bacilli carriers except operative measures or means to increase the flow of bile. For this purpose the best agent, he says, is bile itself or some preparation of bile. He has administered dried bile or salts of the acids of the bile, and has thus caused increased production of bile with the washing out of typhoid bacilli and long intervals of bacilli-free stools, but even this, kept up for months, was not always successful. Every effort should be made, he says, to introduce substances into the gall bladder that will inhibit the growth of typhoid bacilli. His patients were all insane or imbecile and better results might be obtained with more intelligent individuals.

104. **Cutaneous and Ocular Reaction to Tuberculin.**—Feer's experience with these tests in children impels him to warn that the ocular test should never be applied to scrofulous children, as it is liable to set up rebellious conjunctivitis, etc. The cutaneous reaction is much safer and fully as reliable, he thinks.

109. **Typhoid Bacilli Carriers.**—Grimme favors an operation on the gall bladder as the only certain means of banishing the typhoid bacilli from the stools of confirmed bacilli carriers. He reports a case in which the patient had to be kept isolated in the asylum on account of typhoid bacilli in the stools, and, in order to put an end to this isolation, with its depressing influence, the gall bladder was removed. It contained about thirty-five small gallstones. After an interval typhoid bacilli could no longer be detected in the stools. He advises this operation, or cholecystotomy alone, as a routine procedure for typhoid bacilli carriers in insane asylums, to put an end to the isolation otherwise imperative.

Policlinico, Rome.

January 5, XV, Practical Section, No. 1, pp. 1-36.

113 Modern Conceptions of the Corpus Callosum. V. Forli.
114 *Ocular Reaction to Tuberculin. B. Zaniboni.

114. **Ocular Reaction to Tuberculin.**—Zaniboni reports that the reaction was positive in 23 patients who presented clinical signs of pulmonary tuberculosis, while it was constantly negative in 17 cases in which there was clinically no suspicion of tuberculosis. [G. Serafini states in the *Gior. d. R. Accad. di Med.*, Turin, November, 1907, that the ocular test is not conclusive in cases of tuberculous processes of the bones or joints. He relates the particulars of 63 such cases in which it was applied. The reaction was positive in certain gonorrheal articular processes in which there was nothing to suggest tuberculosis, as also in several cases of senile and other non-tuberculous bone affections. He does not attempt to decide whether the positive findings represent a latent tuberculous focus or merely an accidental non-specific reaction. The reaction is less pronounced the older the tuberculous lesion and the severer the anemia. He adds that the instillation of the tuberculin is by no means so harmless as has been asserted. The inflammatory reaction lasted for a week or so and was liable to reappear later if the eyes were exposed to any source of irritation. One patient with a gonorrheal wrist affection developed an intense catarrhal process in the conjunctiva with blisters and keratitis. The conjunctivitis has recurred in this case, as also in a woman of 62 with arthritis without effusion; an intense catarrhal conjunctivitis followed the instillation, with an abscess formation. In a man of 28 with a mild tuberculous pulmonary process the instillation produced a reaction not only in the eyes but in the lungs and glands, with general phenomena. In a few cases, the negative response to the instillation differentiated a gumma or other dubious non-tuberculous affection. There was no reaction in 3 cases of certain but mild tuberculosis.—ED.]

Books Received

APPLIED PHYSIOLOGY. By Frederick A. Rhodes, M.D., Professor of Physiology and Embryology, Medical and Dental Departments of the Western University of Pennsylvania. Pp. 206. Cloth. Price $1.50. Pittsburg: Medical Press, 1907.

ESSENTIALS OF MODERN ELECTROTHERAPEUTICS. By Frederick Finch Strong, M.D., Instructor in Electrotherapeutics at Tufts College Medical School, Boston. Cloth. Pp. 112. Price $1.00. New York: Rebman Co., 1908.

PRIMITIVE SECRET SOCIETIES. By Hutton Webster, Ph.D., Professor of Sociology and Anthropology in the University of Nebraska. Cloth. Pp. 227. Price $2.00. New York: MacMillan Co., 1908.

ANNUAL REPORT of the Asylum for the Chronic Insane of Milwaukee County, Wis. Paper. Pp. 57. Milwaukee: Krueger & Domann, 1907.

REPORT of the Seventh Annual Conference of Sanitary Officers of the State of New York. Paper. Pp. 216. Albany: J. B. Lyon Co., 1908.

PROCEEDINGS of the Royal Society of Medicine. Vol. I. Paper. Pp. 222. Price $2.00. New York: Longmans, Green & Co., 1908.

FORMULAIRE SYNTHETIQUE DE MÉDECINE. By Dr. L. Pron. Flexible Leather. Pp. 601. Paris: Jules Rousset, 1908.

FOURTEENTH Annual Report of the Craig Colony for Epileptics at Sonyea, New York. Paper. Pp. 103.

NEW PATENTS.

Recent patents of interest to physicians:

874393. Indicator for bottles. Joseph Collins, New York.
874495. Surgical instrument. Wm. Gaterman, Manitowoc, Wis.
874596. Producing oxygen. Armand Janet, Paris, France.
874598. Pasteurizer. Aage Jensen, Eureka, Cal.
874446. Surgical splint. Stanley C. Slater, Bolton, England.
874810. Cystoscope. Reinhold H. Wappler, New York.
874555. Invalid's bed. Olive K. Woollen, Franklin, Ind.
874933. Medicine case. Joseph Bristow, Jr., Oak Park, Ill.
875046. Gynecological sling. Madison C. Burrus, New Franklin, Mo.
874942. Nursing bottles. Theodore H. Cook, Minneapolis.
875415. Generating formaldehyde. Arthur Eichengrun, Dusseldorf, Germany.
875062. Producing camphor from camphene, isoborneol, or other camphor-producing substances. Charles Glaser, Baltimore.
875665. Emulsion of oil or the like. Oscar A. H. H. Kosters, Hemelingen, near Bremen, Germany.
875666. Holder for soda-water glasses. Wm. Livingstone, New York.
875278. Ophthalmometer. Emil B. Meyrowitz, New York.
875380. Composition for disinfecting, antiseptic, and other purposes. Ludwig H. Reuter, Hoboken, N. J.
875122. Truss. Benson S. Sills, Belleville, Ont., Canada.
875558. Purifying hydrochloric acid. Lewis B. Skinner, Denver.
875482. Artificial limb. Wm. G. Wyatt, Boreing, Ky.
876044. Operating table. J. H. Downey, Gainesville, Ga.
875795. Stethoscope. D. O. Fosgate, Chicago.
876173. Catamenial drawers. F. Guttman, New York.
876311. Manufacturing condensation products from formaldehyde, tannin, and aromatic monhydroxyl compounds. H. Hildebrandt, Halle-on-the-Saale, Germany.
876002. Water-bottle stopper. H. P. Kraft, New York, and M. C. Schweinert, West Hoboken, N. J.
875845. Sexual armor. E. L. Perkins, Beaver Bay, Minn.
876237. Chest protector. G. H. Ridlon, Revere, Mass.
876017. Artificial limb. G. X. Roberts, Brattleboro, Vt.
876238. Bed for the sick. R. Rode, Kragero, Norway.
876022. Shield for enlarged joints. J. H. Schiffhauer, Pittsburg, Pa.
875742. Clinical-thermometer attachment. R. F. Schneider, New York.
876101. Water-bottle stopper. M. C. Schweinert, West Hoboken, N. J., and H. P. Kraft, New York.
876103. Massage apparatus. H. W. Smith, Boston.
875764. Composition for production of aromatic baths. A. Zucker, Dresden, Germany.
876676. Eye-shade. J. W. Alderson, San Francisco.
876796. Nozzle. E. Gerlach, New York.
876491. Antisnoring device. C. F. Rohwer, Hot Springs, Ark.
876851. Preparing pure lithium compounds. W. E. Wadman, Bayonne, N. J.
876671. Bed-pan. G. M. White, Pittsburg, Pa.